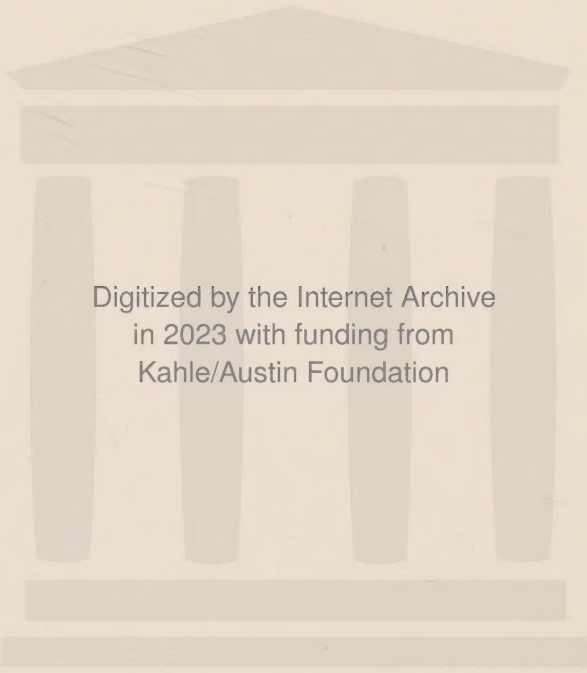


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ELEMENTARY EDUCATION

ITS PROBLEMS AND PROCESSES

BY

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PREFACE.

This book is a result of experience with, and study of, various aspects of elementary education. Out of this experience and study has grown the conclusion that efficiency in teaching is the outcome of persistent effort based on progressive insight into the nature of the processes involved. Except as regards the purely mechanical aspects of schoolroom management, mere experience in teaching is fruitless.

One element in the growth of the teacher is an understanding of the aim and meaning of education as a concrete social process. Such an understanding paves the way for an intelligent and profitable study of the materials and method of education. (Chapters II.-V.)

A second element in the growth of the teacher is a realization of the fact that in the concrete processes of discipline and of the recitation, if anywhere, the aim of education is to be progressively realized. This insight makes profitable a study of discipline and of the recitation in their relations to the aim, materials, and method of education. The insight thus gained also enables the teacher to appreciate the important relations which exist between thought and expression. (Chapters VI.-X.)

A third element of growth is a comprehension of the nature of the successive stages of the child's mental development, the demands made upon the materials of education and upon the method of teaching by these stages, and the relation of interest and attention to every aspect of elementary education. (Chapters XI.-XIII.)

These elements do not necessarily come, as matters of individual attainment, in the order just sketched, nor does a

teacher gain complete insight regarding one and then another. Indeed, a teacher may be efficient without having consciously formulated them at all. All growth, however, is a unified and progressive process.

The materials needful for growth in insight and in efficiency abound in every schoolroom. What teachers need to do is to think about the perspective of their work, and thus discover its significance. There are no "petty details" to the one who works intelligently, for he comprehends the relations of the things taught and done to life.

The purpose of a book on elementary education ought, therefore, to be to stimulate its readers to think. In order to bring about this result, the processes and problems which confront the teacher must be the material out of which the book is wrought. The treatment of this material should be of a character to invite the reader to form independent judgments.

This book, accordingly, has chapters on the Aim, Meaning, Materials, and Method of Education; on Discipline, The Recitation, The Relation of Thought to Expression; Stages of Knowledge and Stages of Instruction, The Preparation of the Teacher; and a summary of the theses which underlie the arguments and conclusions of the book.

The distinctive features of this book are: its dealing with the concrete processes and problems with which every teacher is familiar; its working from this material, by analysis, description, and argument, to educational principles; its introduction, in simple and concrete form and in connection with the discussions, of those fundamental psychological truths which are at the basis of all valid learning and of all successful method; and its emphasis upon the social view of education.

The book, therefore, should appeal to those who are teaching in elementary schools, in either city or country, and to those who are preparing to teach in such schools.

In common with all students of psychology, sociology, and education, I am indebted to the writings of Comenius, Herbart,

Spencer, Giddings, Ward, Leslie Stephen, William James, J. Mark Baldwin, and John Dewey.

There is another indebtedness—almost personal—to men who as teachers have been to me as “stimuli to unrest”; C. A. McMurry, David Felmley, George P. Baker, Josiah Royce, Hugo Münsterberg, Paul H. Hanus, William James, and John W. Cook.

My personal thanks are due to Miss Ida S. Simonson, who has intelligently and sympathetically criticised the composition, and to President David Felmley, who has made many helpful suggestions regarding the book itself.

JOHN ALEXANDER HULL KEITH

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CHAPTER I.

INTRODUCTORY.

Education, in one aspect or another, touches every human interest, and is the most universal concern of mankind. It is a process described in almost as many ways as there are persons who consider it. An engineer once said to William Hawley Smith: "An educated man is a man who is onto his job." From this engineer's point of view, education is a process of becoming proficient in doing one's work, in performing skillfully those things which it is his business to perform. From this point of view, a skillful ditch-digger is an educated man; and, from any point of view, he is educated *as a ditch-digger*. This means, if he be not educated in other ways, that his view of life is limited and narrow.

Education is the most universal concern of mankind because (1) it touches and relates to every phase of human activity, and (2) it is a process which continues in time from the cradle to the grave. A man who paints crude buildings, mixes and spreads his paint with skill which he has acquired through education. The performer of a thrilling acrobatic feat has learned to do it by and through his education. Skill in doing things always means that one has been educated. Whenever human activity becomes purposed (that is, ceases to be random, reflex, and instinctive) we find conclusive evidence of education. Moreover, for any individual, the process of education extends throughout his life. In extreme old age one may acquire relatively few new thoughts; but as the grandmother sits knitting, memory keeps time to the click of the needles and the former events of life are brought into relation with the present and thus given a new significance. As long as one's control over things in-

creases, as long as one is not wholly a creature of habit, one is learning, and, by virtue of his learning, is being educated.

Manifestly such a universal process may be considered in many ways. And even when, by analysis, we attempt to consider only the essential elements of the process, we find education such a complex thing that no one description or definition is adequate. One says that education is a process of *othering*, meaning thereby that every experience by which one becomes other than he was before, is educative, and that the sum of such othering experiences constitutes one's education.¹ Another says that education is a process of *world-building*, meaning thereby that the mental processes by which man constructs for himself a realm of related and systematized conscious activities, constitute one's education.² Still another says that education is *the removal of the tension between the real and the ideal*, and by it means that education is the process by which mind becomes progressively organized through attaining, on the basis of what it is, its possibilities.³

But when a community, or "society," consciously undertakes, through the organization of a school system, the systematic education of its youth, there is implied in this fact an aim which society desires to realize through this process. This aim is not the same as the process, for the community, or "social group," desires that the process shall have a certain result; not merely *othering*, but *othering* in certain definite directions; not merely building a world, but building an acceptable and worthy world; not simply removing the tension between the ideal and the real, but removing the tension between worthy ideals and the real. Society thus sets up educational aims and establishes schools for the realization of them.

The person or persons in charge of these socially organized schools have, therefore, the problem of how best to realize educational aims by and through the organization and conduct of

¹ Dr. John W. Cook.

² Davidson, in *Educational Review*, Vol. XX, p. 325 ff.; Nov. 1900.

³ Tompkins' *Philosophy of Teaching*, pp. 73-108, especially pp. 102-103.

the school. This single problem readily separates into two problems, viz., What materials are most effective in realizing these aims? and, What methods of teaching are most efficient? In general terms, experience is deciding what the best materials and methods are. To state this more in detail, the studies of existing social needs, of the materials suited to the different stages of development of children, and of the ways in which the minds of children act and grow, are the sources of our varying answers to this fundamental problem of the school.

There are those who believe that this fundamental problem should be sub-divided and parceled out for solution. For example, let ethics set up the end of education; let psychology ascertain the laws of mental action and growth; let the specialist in art or in science or in geography or in history decide what portions of these subjects children should learn; and when all this has been done, let the teacher take the conclusions of ethics as fundamental principles, the laws of psychology as definite descriptions of how the mind grows, and the course of study as a static, fixed, unchanging compilation. The teacher thus becomes an executive, a task master, a *schoolmaster*. And, really, if the aim of the school be only the acquisition of so much knowledge and skill in certain ways, this *executive-teacher* plan is an excellent one. But if the aim of the school be a higher thing, if it be the formation of socially efficient moral individuals by and through the process of education, then the teacher should be an artist, not merely an artisan.

To be an artist-teacher demands that one be able to act intelligently with respect to all the complex aspects and elements of education. The teacher must, on the side of the material of education, have more than a mere knowledge of the facts of geography, of history, of nature, of whatever may be taught. This additional thing, with respect to the material of education, is *insight*; is an appreciation of the worth of the facts and principles to human life—for only in this way can the teacher solve

the problem of the relative values of the things that might be taught.

Moreover, no secondhand ethical code will be satisfactory to the artist-teacher; for unless one's ethical code has been consciously worked out it can have no enthusiasm and, hence, no inspiration for others. And, finally, the artist-teacher's knowledge of how the mind of the child works must be a knowledge born of experience, and not of verbal repetition. It is easy to learn a definition of apperception, but difficult to teach in such a way that each child in the class apperceives thoroughly. It is easy to understand that association by contiguity has little of meaning about it, but it is far from easy so to teach that association by similarity is stimulated. Psychology is so comprehensive a subject that one may study it for years and not know to what extent it is serviceable to teachers.

From the analysis and arguments just given several things should be evident:

I. MOTOR KNOWLEDGE OF PSYCHOLOGY.

No teacher can reach his highest efficiency without a conduct-influencing knowledge of psychology. It is not meant that a knowledge of books on psychology will increase one's teaching efficiency, nor is it meant that even a knowledge of the reality called mind or of mental processes will insure this efficiency. But just to the extent to which one's actual or concrete teaching activity is made to harmonize with the reality of the child's developing mind, just to that extent is a knowledge of psychology serviceable in increasing one's teaching efficiency. The study of books on psychology may or may not be serviceable to teachers. To be of any genuine service, the ideas thus acquired by the teacher must find expression in increased skill in adapting the things to be taught to the capacity of the child.

It is this motor knowledge of psychology, this knowledge that expresses itself in increased skill in stimulating the mental activity and development of children, and this alone that has

value for the teacher. For purposes of polite and learned conversation or argument, for the ability to understand history, sociology, ethics, civilization, life, a knowledge of psychology is serviceable, because there is an interpretative as well as a conduct-influencing phase of psychology. But the way to secure this interpretative value of psychology, its culture value, is to secure the motor value which includes, of necessity, the other. After all, not what one knows, but how his doing is affected by his knowing is the essential thing.

II. MOTOR KNOWLEDGE OF THE AIMS OF EDUCATION.

No teacher can reach his highest efficiency without a living knowledge of the aims of education. One may follow out a prescribed course of study and teach it with great skill, so as to be advanced with great regularity so far as increase of salary is concerned, and even so as to be given social homage and individual love and devotion, but, after all, he may be like a mole in the ground. To be most efficient in teaching geography, for example, one should be conscious of the function of geography in realizing the aims of education. To be thus conscious of adapting means to ends is to be an artist.

Nor is it enough for superintendents and supervising teachers alone to have this consciousness of realizing the aims of education by means of the studies and discipline of the school. So long as this is true, there will be mechanical, "wooden" teachers lacking in that finer quality which gives power and vitality to skill.

Nor is it enough for teachers to be able to recite with due emphasis and intonation the catalogue of aims of education, as set down by educational philosophers, reformers, and enthusiasts. There must be more than this. There must be an appreciation of what these aims are, and a correlative disposition and power to realize them by and through the instrumentalities of the school. This appreciation, disposition, and power

is what is meant by a living, or a "motor" knowledge of the aims of education.

III. THE CHARACTER OF A HELPFUL BOOK.

Any book written with the hope of increasing the teaching efficiency of those who read it must either assume that the readers have that knowledge of psychology and of educational aims which is necessary to an understanding of the principles of teaching presented in the book, or it must present the psychology and educational doctrines in connection with the discussion of these principles of teaching. The first plan is followed most frequently by writers of books on pedagogy and on teaching. Its assumptions are, in many if not most cases, contrary to fact.

Besides, even though one knows psychology and educational ideals, the tendency in reading a book on pedagogy is to read rapidly and not to dwell on the similar or related ideas already acquired. Therefore, if the pedagogical ideas presented in a book are to have their greatest effect, the psychological laws needed and the educational ideals involved should be presented or suggested. This has been attempted in psychologies in which we find "pedagogical applications" following the successive chapters. Such books are better for teachers than either bare psychology or "commanded pedagogy." But if pedagogy be regarded as a series of problems, then whatever related materials are necessary to a solution of these problems can legitimately be introduced. Such a treatment of pedagogy will not be a series of commands or directions, not a schoolroom manual, but rather a series of principles reached through a consideration of schoolroom problems. It is the purpose of this book to treat pedagogical problems in light of psychological principles and of educational aims, and thus to arrive at pedagogical principles.

The purpose, however, in such a treatment of educational problems is not to make "converts," or to found a "system." The greatest service one mind can render to another is to stimulate that other to the best of which it is capable. And so,

in the following pages, though the treatment may be argumentative and the conclusions be drawn in many cases without consideration of all the elements involved, the fundamental purpose is to stimulate those who read this book to face the problems fairly, and to endeavor to solve them for themselves.

CHAPTER II.

THE AIM OF EDUCATION, AND THE SCHOOL AS A SOCIAL EFFORT TO REALIZE IT.

As a process, education is the change in the sequence or the character of one's mental activities. If one has had an experience—say of falling from a tree—when he now sees a tree it is quite probable that he will think of the fall. Had the experience been that of finding something good to eat on the tree, the tendency upon again seeing the tree would be to think of the thing that was good to eat. The order in which mental activities take place (their “sequence”) is changed by educative experiences. The character (or nature, or kind) of mental activities is also formed by the character of educative experiences.¹ A study of science gives one's mind a certain filling or “content;” a study of American history gives a different content. The setting up of certain things for the child to learn implies that someone wishes to give a certain character to his mental life.

Really, though, there can be no change in the sequence of mental activities without a change in their character, because the character of any particular activity is influenced by its predecessors. Suppose that, when one is feeling well, a door slams. His attitude is that of comparative indifference. But if he be ill, or worried about something, the slamming of the door is a different thing to him, because the value of a feeling is partially determined by its position in, and relation to, one's mental series as a whole.

¹ The sequence and character of *future* mental activities are shaped by present activities.

§ 1. THE AIM OF EDUCATION IS ALWAYS THE SAME AS THE
CONSCIOUS AIM OF SOCIETY.

The process of education is a process of *othering*, of *building a world*, of *removing a tension*, of changing the sequence or character of one's mental activities. It is, therefore, the inevitable result of one's coming into contact with a stimulating environment. But in what direction shall the process move? Toward what end?

The mere existence of a body of people having common interests, a "social group," implies a social ideal. People in such groups have a notion of what they and others ought to be and do. Whether the group be an isolated family, a village, a state, or a nation, there is in the mind of every mature member of the group a more or less clearly defined ideal of what each one should be and do; and any such social group tends to utilize its resources for the realization of this ideal. For illustration:—A pioneer family think that their nine-year-old boy should be able to dig potatoes and carry chips into the house; so they set about teaching him to do these things. The mature people of a village think that their children should know more about the life of plants and animals in the world round about them, and so nature study is introduced into the grades of the elementary school, or biology is made a regular study of the high school.

The group connection of each individual to his fellows is manifold. For illustration:—I am a man, a son, a brother, a cousin, a nephew, an uncle, a brother-in-law, a teacher of psychology, pedagogy, ethics, sociology, a lecturer, a renter, a taxpayer; a resident of this town, of a certain ward, of a certain section of the city; a consumer of coal, of food of many kinds, of clothing, of houses and house furnishings, of amusements, of streets, and of music; a member of this society and of that; a reader of this and that magazine. I have a certain relation to all the industrial and commercial processes which my direct social relationships imply. I am tied to my fellows in many ways; and for each and every such social relationship I have a

partial view of what I and others ought to be and do. The synthesis of these partial views makes up my ideal of what others ought to be and do. Each person thus derives from his manifold relations to his fellows *an educational ideal*. In so far as the majority of a given social group have the same educational ideal, to that extent efforts for the realization of it will be put forth.

It should be noted that this educational ideal is a pervasive thing as regards the social group, and also an inclusive thing. The social group sets up certain aims for itself. These group aims constitute the educational ideal. Hence the inevitable change of the educational ideal which takes place in successive generations. If the greatest (most revered) aim of a group be to conquer a given enemy, the education of the young of that group will converge to a single end, viz., the development of soldiers.

Any social group, as indeed any individual, tends to realize separate ends successively, and so there will appear various elements of the educational ideal corresponding to these various separate ends. A social group with a multiplicity of ends, seeks their harmonious realization through a certain coördination and sequence of them. The social group, as a group, sets up as its educational ideal those ends which it strives itself to realize.

If there could be found a group made up chiefly of artists, the educational ideal of such a group would include more drawing and use of color than would be found in the educational ideal of a social group employed in agriculture, or in one devoted to railroad transportation. If these three ideals appear in a single group, there may be the dominance of one ideal or the other as one sub-group or the other is in control; but gradually all three ideals would gain a partial recognition as the social consciousness of the whole group broadened.

Attempting now to gather up the ideas advanced in this section, we may say:—

(a) The social group, as a group, has an educational ideal which grows out of its group needs, experiences, and the ideals of its individual members;

(b) To the extent to which this group educational ideal becomes a conscious ideal to the mature members of the group, to that extent efforts are put forth by the group-whole, by the various sub-groups, and by individuals for the realization of that ideal;

(c) This group educational ideal is a complex, composite thing, having various elements in it; and consequently, various means and agencies for the realization of the various elements of the ideal will inevitably appear;

(d) The group educational ideal is, therefore, a "variable," varying with (1) the successive dominance of the various sub-groups, (2) the change in opinion within the sub-groups, and (3) the inevitable change in the group which comes about in connection with what we call its development, evolution, or progress.¹

§ 2. THE AIM AS A FORMAL, STATIC THING.

It is evident from the preceding section, that the group educational ideal includes what the group regards as best for it. Each group, of course, strives to perpetuate itself socially as well as physically. To do this, the young of the group must learn to perform the functions now performed by the mature members of the group. These functions are of two types, the actual and the ideal. The actual ones relate to the achievement of ends, and to the control of material conditions; the ideal ones relate to feelings towards persons, things, ideals, achievements, and abstract relations. Therefore, one may describe the educational ideal of every social group (past, existent, or prospective) by saying that the educational ideal is to have others become what the social group is. This is a conventional, or "formal," an unchanging, or "static" aim, for the meaning of it is not rendered definite. So, too, to say that the educational ideal is the "development of citizenship" is a formal declaration, for just what is meant by citizenship is not definitely set forth.

¹ Cf. Giddings' *Elements of Sociology*, pp. 330-353, and Small and Vincent's *Introduction to the Study of Society*, p. 262.

So, too, "The formation of moral character," "The socialization of the child," "The development of manhood" are formal, that is, as suitable in describing the educational ideal of the "Patagonians" as in describing that of any social group in our own country.

It will be conceded, of course, that each person who uses any one of these phrases may have some meaning or other which renders it definite to him; and a group may have a definite meaning attached to such a phrase. The educational ideal, however, has this formal descriptive character; and we continue to use the words of a former age while putting into them a new or different meaning.

§ 3. THE AIM AS A SPIRITUAL, DYNAMIC THING.

It has already been intimated that while the phrase by which the educational ideal is described may remain the same, the meaning of that ideal is constantly changing, is, in reality, dynamic. The dynamic character of the educational ideal is the inevitable accompaniment of social progress. "New occasions teach new duties." The view of life, of what is of most worth, of what one should be and do, changes as the individual develops, and just as truly changes as the social group develops. Hence, the impossibility of determining the character of the educational aim of the future.

This real element in the educational ideal, this element that brings it down from phrase to fact, from symbol to reality, is the meaning, or the "content," or the spiritual element of the educational ideal. This spiritual element is a reflection, or image, or representation of the social life of the group in which it is found. It begins as a mere feeling, a dim want, an impulse, and becomes defined and definite as efforts are made to realize it. For illustration:—The rural population of the upper Mississippi valley is now greatly interested in the "Farmers' Institute." They began by discussing the most profitable breeds of sheep for wool and mutton, of cattle for beef and milk, of hogs

for meat, of feeding for growth and for fattening; then came discussions regarding improvements in roads, barns, houses, and implements; then improvements in schools, social organizations—even political parties. The feeling at the basis of all this was at first dim and undefined; and it became definite and clear only as efforts were put forth in this direction and in that.

It is by a succession and summation of similar waves of social feeling that the present educational institutions and the present curricula have been established. As soon as social feeling becomes defined, as soon as a means is found to satisfy the social need or want, another feeling appears. And so the process goes on, day by day, year by year, century by century, epoch by epoch.¹

But a social group is as much subject to habit as is an individual. The buttons on coat sleeves are no longer serviceable, nor are they peculiarly decorative; but we are willing to have them there just because they are there, and because we do not care to distinguish ourselves from others by such a petty performance as the removal of them would be. Many tailors have said, in response to a question as to why the buttons are put on coat sleeves, "We always put them on," "Everybody does it," "It's the style." Twenty-five years ago the arithmetics contained *Alligation*; but this subject was in the arithmetics for exactly the same reason that buttons are still put on coat sleeves, viz., social habit. Once upon a time, computation by alligation was socially serviceable; one needed to be able to do it to act, or "function," as a social unit. Our courses of study are shot through and through with obsolete social adjustments which have no greater reason for being there than have the obsolete words of the dictionary for being a part of the vocabulary of the child. To the extent, however, that an obsolete social adjustment enables one to understand a present adjustment, it is still socially serviceable. The great fact to be empha-

¹ See Judd's *Genetic Psychology*, "The Origin of Some of Our Educational Ideals," pp. 69-97, and also Giddings' *Elements of Sociology*, pp. 53-87.

sized, however, is that the social group is subject to habit, and that, as a consequence, the conservative element (doing as has been done) always appears in the educational ideal. A man who would not think of farming or keeping books as his father did may insist that the schools are all wrong because they are not conducted as schools were when he went to school. So strong is this conservatism in social groups that schools are usually the last social institutions to be regenerated.

Notwithstanding all this tendency to perpetuate old social adjustments, there is clearly discernible the dynamic, spiritual element in the social ideal. The change in school curricula due to the introduction of the Pestalozzian ideals and methods, the Herbartian movement, the temperance crusade, the rise of the modern high school courses, the elective system in colleges and universities, the introduction of science and nature study—all these, and many more that could be cited, show clearly that there is a spiritual, dynamic element in the educational ideal.

§ 4. THE AIM AS ADEQUATE PARTICIPATION IN THE ACTUAL SOCIAL LIFE OF THE RACE, AND IN THE IDEALS OF THE RACE.

Every social group has a certain consciousness of its relation to the whole life of the race, a consciousness of its own segmental and partial character. Every such group is indebted to the past and to other social groups for all that in its life which is not the result of its own discoveries and inventions; and it also feels a duty and responsibility to other social groups, existent and yet to be. In consequence of this consciousness of segmental relationships, every group has as elements of its educational ideal two things, viz., adequate participation in the present, *actual life* of the race, and adequate participation in the *ideals* of the race. "To get on in the world" expresses the first; "to help life forward" expresses the second.

Adequate participation in the life of the race demands control of many activities. Language is, in one way, controlled

and coördinated movement.¹ One needs to gain a control of language so that he may (1) understand others who use it as an expressive instrument, and (2) express his thoughts to others. This control enables one to participate to a considerable extent in the social life of the present. If we include reading and writing in the term language, control of language enables one to participate more adequately in the present because he can understand (1) descriptions of things which he can never see or hear, (2) accounts of what has been done in the past, and (3) the ideals and aspirations of men as expressed in literature. Since all language is, in a last analysis, nothing but an expression, a symbolism of thought, one can interpret language only by the exercise of the imagination. And one can imagine things only in terms whose elements have been, in some form or other, facts of immediate experience.

Therefore, back of the control of language as coördinated motor habit, there must be basal elements of motor experience. This motor experience should be extensive enough, either in the home or in the school, to give the basis for a genuine appreciation of the great types of human activity. There is as great reason for the city child to understand the fundamentals of agriculture as there is for the country child to understand the city's complex means of communication. Each should understand both, not primarily for economic reasons, but so that each may the more fully enter into the life of the race, and thereby live more completely and fully.

But the life of the race has *ideal* elements, as well as *actual* elements in it. These ideal elements grow out of race or group experiences, and are influenced, if not largely determined, by the actual achievements of the race or group. Progressive approximation to ideals means the rise of new ideals. Therefore, adequate participation in the actual life of the race is the

¹ Baldwin's *Mental Development*; Vol. II. *Social and Ethical Interpretations*, p. 128 ff.

basis for adequate participation in the ideals of the race, and should be supplemented by training along ideal lines.

With the growth in the division of labor, in specialization of function, and in the consequent dependence of group upon group, there comes the sense of relationship to all those things which concern men. This sense of relationship we call the brotherhood of man. Therefore, instead of a purely group ideal, we find, in every civilized group, a race ideal. As men, looking up at the sky, saw at first only a multitude of separate stars, and later came to see a universe of which the separate stars are but parts, so, also, men, in contact with social groups, at first saw only separate groups each with its own exclusive interests, and later came to see the unity of groups in the life of the race.

This vision of the unity of groups is forever blurred and shadowed by the selfish, or egoistic, tendencies of men; and yet, it is becoming progressively clearer through the centuries. Of late we have heard much of Anglo-Saxon unity, of Slav and Magyar, of Negro and of Indian; but the Church forever reminds us of the unity of these races and nationalities in the fundamental unity of the human race. And so, in consequence of our social relationships, past, present, and yet-to-be, in consequence of the character of our primary experiences, we are coming to express the educational ideal as *an adequate participation in the present life of the race and in the ideals of the race*. The aim is the development of men—the “socialization” of the child.

§ 5. HOW PARTICIPATION IS POSSIBLE.

If we have correctly stated the aim of education, there at once appears the question, “How is this aim to be realized?” “What is the method of socialization?” For the sake of clearness we shall divide the answer to this question.

(a) Any given social group has certain relations to the natural environment. The group may believe, as do savages, that there are essences in things and, therefore, fall down in

worship before them. Or, the group may believe that things have no personality, that they are under law, that things are given men to use. Life is maintained, primarily, by getting into certain relations with natural things—food, air, drink, etc. The child, to become socialized, must gain a partial control over natural things, usually the partial control exercised by the group to which he belongs. This control is acquired, in large measure, by an imitative process which utilizes successive stages of muscular control. The child successively learns to hold the cup containing water, to get the water into the cup from some containing vessel, to get the water from some (to him) primary source into the containing vessel, etc. He learns to eat things from his plate with his spoon, to get things from dishes to his plate, to get food ready for the table, etc.

The limit to this activity is found in the permanent adaptations made by society. In early times a pioneer boy was taught to dig wells; now the process usually stops with his knowing how to turn a faucet. Some people in the group must, however, know how to dig wells and how to pump water, or else all the faucets would run dry. The boy may not learn how to cook, but if some one did not know how to cook, the dishes on the table would be empty. It seems perfectly evident that, other things being equal, the more extensive one's real knowledge of the various controls over the natural environment exercised by his social group, the more intensive is his genuine socialization. A motor acquaintance with these primary social adjustments to natural conditions puts one into a sympathetic and appreciative social attitude, and gives him a power of control which is conducive to initiative.

What is called "Occupations" in some of our schools is founded on this idea. To make brick, to care for a garden, to weave cloth, etc., give the child the group feeling toward the maintenance of life, and bar forever that shallow and false notion that clerking is more dignified than farming. Such occupational education, while not striving exclusively for me-

chanical skill or for economic efficiency, inevitably gives the fundamental feeling that "all socially serviceable labor is honorable."

(b) The life of the group, however, includes more than this mere physical living. Social and mental life are the ends of physical living. Those who thus control the natural environment think and feel and will. These mental activities are communicated to others by a complex system of symbolism. One can genuinely get into the mental life of those round about him only by translating the symbolical expression of this mental life into equivalent mental activities. Gesture is such a symbolism; so, too, is speech, writing, and art. If an American boy were placed among Chinese people, his only way of understanding their meanings would be by an interpretation of their symbolical gesture, and even this would be faulty because their gesture symbolism differs from that which the boy has acquired. This illustration reveals the necessity for the child's acquaintance with, and control of, the means by which men express their meanings.

The control of symbolism always has two phases, viz., an interpretative, passive association of meaning with symbol by virtue of which one is able to understand the meaning of those who use the symbolism, and an expressive, active association by which he uses symbols to convey his meanings to others. These two phases should constantly supplement each other, for only in their unity is to be found that relationship to life which gives vitality to mental activity. The language and composition work of elementary schools should always be aspects of the studies which are thought-giving and thought-stimulating. Arithmetical symbolism should be related to quantitative relations in which the child is interested. We may say that, in general, so far as there is a "new education" as distinguished from an "old education," the new education proceeds *from meaning to symbolism*, while the old education attempted to proceed *from symbolism to meaning*.

It is instructive to those who are at all interested in the cause of education to learn how blind children are taught, how deaf mutes are instructed, how such women as Laura Bridgman and Helen Kellar have been educated. In all such cases the two phases of gaining control of symbolism stand out in clear relief. Even the method by which the child learns to use a new word in the home has enough of pedagogical revelation in it to produce a great change in the methods of some of our schools.

(c) Implied in all that has been said in this section, is the idea that social life has a structure, an organization; and that the child, to become socialized must become a member of social institutions. Occupation accomplishes this partially, but there are social institutions other than those of industry. Whatever the institution may be, one really becomes a member of it only *by being a member, by actually performing his part in the institutional activity*. These social institutions are organized relations by which men serve each other and through which each man, by serving others, serves himself. To be socialized in any genuine sense, one must become a part of this fundamental institutional life of the social group. He who lacks the ministration of connection with a family is not completely social. If this lack is from early childhood, the individual may become anti-social. The unsocial are simply those who stand apart and refuse, for any reason whatever, to take part in social relations. The games of children are of great value, therefore, because of the social relationships involved in participation in them.

Summing up the section:— It is clear that participation in the life of the social group or of the race is possible, in a broad way, in so far as one (1) gains that control of the natural environment which is exercised by the social group to which he belongs, (2) learns both passively and actively to control the mechanism by which men express their ideas, and (3) enters into the social life of the group by actual participation in its institutional activities.

§ 6. THE ORGANIZATION OF SCHOOLS IS A SOCIAL FUNCTION.

It was learned long ago that certain of the things mentioned in the preceding section could be taught to twenty almost as readily as to one; and hence schools were organized as a matter of economy. The things most readily taught to a number of persons at once are those symbols by which men express their thoughts. Speech was taught in the homes, but reading required a more continuous and regular application than most homes could give. Also, because of its complex character, computation was soon turned over to the school. The adaptation to natural environment was taught in the homes, the boys and girls learning to do the things their parents did. So, too, participation in institutional life was omitted from the school.

The ultimate motive, however, for the founding of schools was humanitarian—a desire to give to those who would not otherwise have it, the ability to understand the printed page so that they might get on better in this world and in the life to come. Nearly all systems of schools have sprung from some religious impulse. Our missionaries wish to teach the natives to read so that the lessons of the Bible may impress their heathen hearts. And even to this day, we hear every little while of some school founded and maintained by those who have such a motive. If, however, we confine our attention to the older universities of our own country we shall find that they were originally expressions of a religious motive. And no matter what is taught in a school, be it cooking, carpentry, the catechism, decimal fractions, the colonial industries, the forms of the personal pronouns, or what not, the fundamental purpose is that by and through the thing taught the child may become genuinely socialized.

In every large group, however, there are those who soon recognize that a school may be made a good financial investment. Private schools are established for the aristocracy which wishes its children to have a different environment from that

of the public school and a kind of polish and accomplishment in the fine arts, or else for those who wish rapidly to get some motor control or bit of technical skill by means of which they can earn a livelihood. Such schools, however, are always expressive of ideals of education different from those of the social group.

Slowly, indeed, from the standpoint of the development of the race, there arises a social consciousness of the need of schools for the social group. With the clear social consciousness of this need, a public school is established; and, as social need becomes more clearly a matter of social consciousness, the character of the public school changes. Elementary education comes to include more than reading, writing, and arithmetic; secondary education is established and develops from devotion to the classics to an elective course filled with studies having a distinct social reference.

The ideal of the public school is clearly the social ideal of adequate participation in the actual and ideal life of the race. If the homes do not furnish the children those primary forms of control over the natural environment which every adult should have, then the school *should* and *must* do it. If there is any thing which the expanding life of the child needs for its genuine socialization and which is not already supplied the child by any other agency, then it is the business of the school to supply it. The great benefit of group instruction lies not so much in the economy of it as in the social attitude which comes to those who are thus instructed.

The growth of the public school ideal means the decline of private schools. The latter still flourish in certain aristocratic centers, especially for girls, whose education is still largely thought of as a series of unusual accomplishments and skill in social forms, and in places where the stress of making a living is keenly felt. But secondary schools are establishing business, commercial, and technical courses so that one may prepare himself for economic efficiency in the public school. The scope of

the public school is enlarging as social consciousness becomes more and more alert, and it is not too much to assume that society will continue to approach that degree of self-conscious direction which has rendered individual achievement so successful.

§ 7. THE REAL SOCIAL CHARACTER OF THE PUBLIC SCHOOL.

Society wishes to conserve itself and also to advance. Therefore it establishes an institution for the accomplishment of these two things. However it may have originated, whatever its history may have been, the public school now stands as the conscious effort of society to socialize the young. This socialization includes all that is necessary for the development of the individual into harmony with the social pattern, and also all that is necessary to social progress. Socialization is more than knowledge, for it includes appreciation and conscious doing of that which is valid for the group. The public school can never be held wholly responsible for all these things, but it can not escape the duty of having as its conscious aim this great aim of socialization. The real basis for judging of the efficiency of a school is the extent to which its pupils reveal in their conduct right attitudes toward life. For this end, then, are schools established; for this end, society taxes itself; for this end, and no other, are millions of children now under the guidance of teachers.¹

¹ Compare with Dutton's *Social Phases of Education*, pp. 3-36; John Dewey's *School and Society*; Butler's *The Meaning of Education*, pp. 17-31, 86-87, 108, 112, 120-122; Hanus' *Educational Aims and Educational Values*, pp. 5-7, 13.

CHAPTER III.

THE MEANING OF EDUCATION AS DETERMINED BY ITS AIM.

Having described the aim of education in terms of present social feeling, it is necessary to inquire into its meanings. These meanings always cluster about the actual things by and through which it is sought to realize the aim of education. Therefore, we have now to consider education as a process, from one stage to another, from the shifting, uncertain mentality of the newborn babe to the maturity of the adult. What phraseology best describes this process? It is because men look at this process with the bias of previous experiences that we find differences regarding the meanings of education. These differences should be studied with the idea of determining their relative worth as descriptions of the real nature of the educative process. Therefore, in this chapter we shall state the most important of these descriptions, examine the bias from which they spring, and endeavor to find a description which includes the essentials of the educative process.

§ 8. EDUCATION AS A PROCESS OF ORGANIZING ACQUIRED HABITS OF CONDUCT AND TENDENCIES TO BEHAVIOR.

William James, in stating that education is "the organization of acquired habits of conduct and tendencies to behavior,"¹ has most happily phrased the meaning many people attach to the educative process. This view arises from a contemplation of the vast function of habit in our lives. Habit rests upon a physiological basis, viz., the connection through a nerve center between a sensory stimulus and a motor response. Such a connection having been once established, there is such a result-

¹ *Talks to Teachers*, p. 29.

ing modification of nerve structure that a similar stimulus tends to produce a similar motor response. In the brain, where there is a division between sensory and motor areas, we find different centers in different areas connected by nerve fibers which are called "association tracts." Therefore, as one learns to accommodate himself to any stimulus whatever, there is an organization of his brain, or, at least, a tendency to such organization. And, further, since such simple responses as we have been considering above may be connected together, tendencies to behavior (conduct, motor response) arise; tendencies such that, on suitable stimulation, behavior of a definite kind results.

Over and beyond this physiological habit and tendency, parallel with it, perhaps, there is mental habit and mental tendency. This mental habit and tendency together constitute us what we are and what we tend to become. The self is "the sum total of all one *can* call his own."¹ Therefore, education is the process of organizing acquired habits of conduct and tendencies to behavior. Education is both physiological and psychological. In arithmetic, for example, this is clearly seen. The so-called "number facts" become matters of acquired habit; so, too, the definitions and tables and the interpretation of arithmetical symbolism. These separate acquired habits become organized into a system which by its very structure has certain tendencies. These tendencies are of two kinds, viz., habitual and accommodating. So, too, every subject taught in the elementary school or in college, every motor adjustment, every feeling that comes from activity—each yields an organized mass of acquired habits and also certain tendencies to behavior.

This is an attractive description of the process of education, and may be interpreted in a purely physiological sense. If so interpreted it makes education merely a process of brain organization. Now, while with all education there is an organization of the brain, it does not follow that education is nothing more than this. But James may be interpreted to mean that the men-

¹ James, *Briefer Course*, p. 177.

tal aspect of the individual is organized by and through his brain organization. Whether this interpretation can be substantiated or not, it seems consistent with all we know of developing mind to suppose that there is with the process of mental development, especially in its earlier stages, a parallel, antecedent, determining brain activity and development.

As a description of the process of education, then, we may say that James, in the description quoted, has given a concise and illuminating account. But this account sets up no end, no goal to guide us in our attempted control of the process. We must confess, however, that it is no valid objection to a description of the process of education to say that it does not at the same time describe the end or aim of the process. Still, if an equally valid and significant description could be found that did include or imply the end it would be more acceptable.

§ 9. EDUCATION AS A PROCESS OF GRAFTING SOCIALLY SERVICE-
ABLE REACTIONS UPON, AND THEREBY SUPPLANTING,
NATURAL TENDENCIES.

This description is also best stated by James,¹ but is held by many others as well. It assumes that there are certain native tendencies in the child—reflexes, impulses, and instincts—some of which are serviceable and some non-serviceable. The description also maintains that education begins when a socially serviceable attitude is grafted upon a natural tendency. The child naturally grasps for objects, and on this basis he is taught to pick up various objects, to hold his knife and fork, to hold a pen or pencil, to guide a chisel or plane, to wind a clock or a watch, etc., etc. So, with all the things a child is taught:—language is grafted upon the babbling impulse or instinct; gesture, upon the natural tendency to outline imitatively things thought of (the primitive motor tendency of all consciousness); art, upon the natural tendency to express in permanent form

¹ *Talks to Teachers*, pp. 38-44.

one's æsthetic appreciation; mathematics, upon the natural tendency to count, etc.

Were it not for these natural tendencies one would not be able to teach the child anything at all. The child must have, originally within him, the power to respond to stimulations and efforts or else there could be no response. As fast as the child thus grafts a new attitude upon an old attitude, the resultant is so much basis for teaching another new attitude, and so there is no limit to the number of things an individual may be taught—save this, one can never teach another anything that can not be grafted directly upon a natural reaction or indirectly upon an overlaid natural reaction.

Further, this description concedes that there are certain natural tendencies that should be destroyed. Undesirable natural tendencies are destroyed by substituting desirable reactions for them. Again the process is one of association, as is the grafting process; and the description is valid because all education is (whatever else it may be) a process of association. The weak point of the description is that it does not include the totality of experience-acquired character in the term *natural tendencies*. Natural tendencies soon become overlaid by experience, and this derived level or mass of experience is just as valid a basis for education as are the natural tendencies. The description is valid, however, for the *first* things a child learns.

§ 10. EDUCATION AS A PROCESS OF WIDENING THE GAP BETWEEN IMPRESSION AND EXPRESSION BY INHIBITION.¹

All observers of young children have noticed that with them any impression of sufficient intensity is immediately followed by a reaction, and therefore agree to the law of nervous reaction, viz., every impression is followed by a motor response. Naturally, then, one reacts immediately to any stimulus. Soon, however, the child seems to hesitate, to hold back his response, to inhibit the motor tendency, to widen the gap between im-

¹ See Davidson's *History of Education*, pp. 10-12.

pression and expression. The appearance of this gap paves the way for the rise of voluntary consciousness, for without it one could only know of his actions after he had acted. One essential feature of education is that it enables one to see the result of his act *before* he acts. This gap is that which makes reflection possible, is that which makes it possible for actions to be matters of consciousness before their realization. Were it not for these characteristics, human actions would forever be of the reflex type and one could never learn anything from his experience.

Inhibition, physiologically speaking, is a contrary nervous current either arresting a positive current in the nerve itself or else causing a contrary set of muscles to act so as to negate an incipient movement. Psychologically speaking, inhibition is the checking of an impulse by opposing another to it, the arresting of one idea by another idea. Hence, through inhibition, one's actions become consistent. Through inhibition, self-control arises.¹

This description is based upon the notion that all education is of the type of physical education, and it ignores the apperceptive activity of mind by which data of various kinds are united into higher mental unities. In this apperceptive activity, inhibition plays no part at all. In fact, all apperception is a unifying, or synthetic activity which is, in a sense, the opposite of inhibition.

§ 11. EDUCATION AS A PROCESS OF WORLD-BUILDING.

Realizing the importance of apperception in all education, and realizing that the mental data resulting from it are not the same in character as the objective, material things surrounding us, some people² have described education as a process of world-building. By this description it is meant that each mind builds up a world for itself, constructs its own reality, develops a world of ideas. Education is this process, this inner activity of the

¹ Compare with Baldwin's *Elements of Psychology*, pp. 42-44.

² Notably Davidson, *Educational Review*, Vol. XX, p. 325, Nov. 1900.

mind. In a sense, arithmetic has an objective existence apart from a child's mind, but it comes to have an existence for the child only as he constructs the relations for himself, as he thinks them, as he builds up within himself an arithmetical world. This constructive activity is the only real education—all else is but means to this end. In a sense, all things which are to become matters of consciousness at all, have an outer existence at first; and the process by which the mind builds them up into related conscious unities is the process of education.

This description, it will be noted, places all education on the plane of conscious world-building, and, hence, takes no account of that large fraction of life which is never conscious at all, and which, though dumb and unappreciated, still colors all one's conscious mental activities. Hence, the description is true only as it relates to the higher, or conscious aspects of the apperceptive process.

§ 12. EDUCATION AS A PROCESS OF OTHERING.

If any one takes the common “before and after” view of any educative experience, he will note that the individual, after his educative experience, is other than he was before. This othering process, whether toward the good or toward the bad, is the educative process. This view emphasizes the abstract aspect of the process of education, considered as a series of individual, separate changes; and it fails to note the *taking-up-of-the-past-into-the-present* aspect of the educative process. Education is really a synthetic, progressive process, and is never adequately described by emphasis upon the essential character of the separate educative acts. This description, however, does set up the standard for judging whether an experience has been educative, and is, therefore, a valuable way of looking at the process.¹

¹ My indebtedness to Dr. John W. Cook for this description has already been acknowledged.

§ 13. EDUCATION AS A PROCESS OF REMOVING THE TENSION
BETWEEN THE IDEAL AND THE REAL.

If we analyze any voluntary act, we find that a consciousness of the end exists as an idea, or ideal, before the mental aspect called volition begins. There is, therefore, a tension, or strain, between the present, or actual self and the idea, ideal, or self-yet-to-be. The removal (not the mere denial or abandonment) of this tension makes the idea to become real, makes the self other than it was before. In the process of education, therefore, there are two stages, viz., an establishment of such a tension as has been described, and its removal. The business of the teacher is to condition pupils in such a manner that progressive tensions are established in their minds. The business of the pupil is to remove, by his own activity and effort, the tensions thus established.

If this process be analyzed a little more closely, the idea, or ideal, is found to be merely an aspect of the self which receives greater emphasis by this seeming separation and opposition. The ends which one holds before himself in this way are really aspects of one's self which are given an objective reference by the educative process. This felt tension and its removal is what Rosenkranz calls "estrangement."¹ A new object presented to a child seems strange to him at first, but this sense of strangeness is removed just in so far as the child is able to interpret the object in terms of his own previous mental activities. It would perhaps be more in harmony with modern ideas and terminology to say that the mind projects under the form of ideas, ideals, or ends, certain aspects of itself, and by the realization of these ends becomes *explicitly* what before is was *implicitly*.

The objection to this description of the educative process is that it denies the educative reality of any experience in which there is not a consciousness of the tension between the real and

¹ He says (*Philosophy of Education*, p. 26): "In estrangement the mind sets itself over against itself and make itself a special object of attention."

the ideal. The researches of modern experimental psychology tend to prove that much of our mental activity becomes conscious only after we have performed it. And if this be true, and if all mental activity which organizes the self is educative, it is evident that the description of the educative process which is based on the analysis of voluntary experience is inadequate to describe those educative experiences that are involuntary.

§ 14. EDUCATION AS A PROCESS OF BECOMING SOCIALIZED BY
PARTICIPATION IN THE ACTUAL AND IDEAL LIFE OF
THE RACE.

Granting the elements of validity in the previously discussed descriptions of the process of education, they may be gathered into a unity and given a statement that is more significant in light of the interests and thinking of our modern life. The great influence of scientific evolution in giving us a method of thinking and of sociology in revealing the character and destiny of society finds ample recognition in the eagerness with which men utilize the results of these mental movements in considering the problems of education. This influence has already been acknowledged in our statement of the aim of education, and we wish now to test its worth in describing the process of education.

Be the process one of removing a tension, of building a world, of othering, or what not, it is also true that it is a process by which one becomes as others are, or, as one thinks others are. *Socialization* is this process. But one becomes as others are only by participation in social life, in social relationships. The social life of the race, or of any group, however small and narrow it may be, has two phases, an actual phase and an ideal phase. Entrance into the ideal phase is possible only from the actual phase. Ideals grow out of present reals, and, hence, all efforts at reformatory education begin by establishing an environment which will give the individual a worthy real. All efforts at *formation*, as well, rest upon the recognition of this relation of the real, or actual, to the ideal.

Socialization begins with the child's participation in the life of the family, is broadened by his childish plays and games, by the imitative acquisition of symbols and manners of acting, by association with other children on the street and in school, by his various skills and motor controls, by his imaginative interpretation of distant social conditions, industrial processes, and manners of living. The growth and development of conceptual thinking lets the child into an appreciation of the nature of external (and mental) relations, and thus becomes the basis for the elaboration of ideals and of efforts to realize them. The ideals of the race have been elaborated out of its experiences, and there is in the child a correlative (if not closely corresponding) development, or evaluation, or elaboration of ideals.

Using the data of psychology, we can easily sketch, in rough outline, the stages or levels in this process of socialization.

There is first the stage of reactive behavior, of responses to stimuli that form the child's consciousness by virtue of the responses themselves. Here belong random, reflex, impulsive, and instinctive reactions, as well as the whole realm of action that comes from suggestion and unconscious imitation.¹ By thus doing as others do, the child comes to feel as others feel. Through laughing at certain things, crying at others, responding as others do to thunder storm, railway train, house cat, etc., the child gets a sense of the value of these various things. Inevitably the child is formed into a certain character by his reactive behavior.

The various ideas of movement, of feeling, and of meaning acquired by reactive behavior serve as so much material for the second level, or stage, of socialization, viz., conscious imitation. The "copy" furnished by the family situations keeps the child busy for a long time. The reproduction of this copy, bit by bit, lets the child into an appreciation of the real nature of social relationships and real activities, and it also acquaints him with

¹ In the chapter on "Method in Education," a fuller description of these processes will be found.

the symbolism by which men express their meanings. There are real social activities and symbolical social activities. The imitation of a real social activity, such as sawing wood, making a pie, etc., gives, directly and inevitably, its meaning. The imitation of a symbolical activity, however, carries with it no such sense of meaning. The great and crowning blunder and danger of school education is the effort to get children to imitate conventional activities for which they have no equivalent meanings. The movement should be, in all primary education, from the real activity—from the meaning—to the symbolical expression. This process continues until the individual has gained control of the symbolism by which men express their meanings.

Having gained control of the symbolism by which men express their meanings and having also a stock of meanings acquired by his experiences of the reactive and imitative types, the child enters upon the stage of interpretation of symbols. Men have expressed many of their meanings in symbols, and by his imaginative interpretation of them in terms of his experiences, the child grows into those experiences of the race which he could never directly experience (history and literature). The child's actual experiences thus become a basis of interpretation not only as regards the printed page and oral language, but also as regards all the symbolical activities of men. The forms of politeness, arts, and the institutions of men yield up their ideas to him.

Each level equips the child with certain controls and powers which render it possible for him to set up ends for himself, to form ideals, and to initiate activities. These activities seem to be the quintessence of independence, and yet they had their basis in social relations, their very existence is possible only by virtue of a society of which they are not independent, and their final worth depends upon the sense of worth held by the social group. At this stage one becomes his own teacher, in a sense; and yet one's obligation to achieve through invention and leadership a higher level of attainment and of idéal for the race is

socially derived and is the motivation to "the achievements of our manhood's years."

There are many ways of learning, and hence there are many valid methods of teaching. But always, by learning, one is *becoming*. This progressive becoming is the concrete process of education, and were there no organized society from which one receives stimuli, and no persons to give one a sense of the worth of his activities, he would never become the person that he does become. The whole range of mental experience is colored and warped by the presence of persons. This concrete aspect of mental activity is essential to any adequate conception of the process. One never fully knows a locomotive until he appreciates the relation of locomotives to life. In fact, the relation of locomotives to life is the essential thing about them. And so the essential thing about a child's mental activity is the influence of that activity in organizing him into a more effective social being.

In light of the social view of education, the process of education takes on a significant meaning. The one comprehensive end takes in the multitude of smaller ends that otherwise become obstructions to the process. The material must meet one unswerving requirement, and the process must be judged by its social reference. Social efficiency, of the actual and ideal types, is the aim of education, and the process is one of organizing an individual in such a way that he actually and ideally participates in the life of the race.¹

¹ Compare with Horne's *Philosophy of Education*, pp. 97-167.

CHAPTER IV.

THE MATERIALS OF EDUCATION, OR THE THINGS THAT MAY BE USED IN REALIZING THE AIM OF EDUCATION.

The views advanced in the preceding pages as to the aim of education and the character of the educative process may be further tested by a consideration of the materials of education. If the commonly used materials of education can be shown to have a social reference and a socializing value, the whole matter will have a stronger position and defense than can be afforded by direct argument.

§ 15. AN ANALYSIS OF ELEMENTARY SCHOOL SUBJECTS TO SHOW THEIR IMPLICIT SOCIAL REFERENCE.

If a course of study for elementary schools be examined, one finds, at least, the following studies: (*a*) language, including oral and written language proper, reading, writing, spelling, grammar, and drawing; (*b*) arithmetic; (*c*) geography; (*d*) history; (*e*) literature; (*f*) construction work in some form or other; and (*g*) nature study.

(*a*) It is obvious that language is a social product, a symbolism by which men convey their thoughts to each other. Language is more than simple expression, for when one uses it, his purpose includes the interpretation of it by another. This mutual sharing in each other's thoughts is desirable on social grounds alone. There is no value in talking to people if they do not think in consequence of the talking. There is, of course, a reflex value even when one uses language to express ideas, but fundamentally language is a device by which one gains the power to understand the thoughts expressed by others, and also the

power to convey his thoughts to others. These two phases of language may be called passive interpretation and constructive use, respectively.

If oral language be analyzed one finds it to be made up of a coördinated series of unmeaning sounds. This coördinated series of unmeaning sounds has, through a process of social acceptance and use, become conventionalized. The gesture element that accompanied all primitive language has been largely eliminated, and oral language is now (especially in English) almost a pure sound symbolism. Written language is, in a last analysis, nothing but a coördinated series of marks. This arbitrary and conventional character of language is ample proof of its social origin. Taken apart from the mental realities which it is designed to express and convey, language is absolutely meaningless.

Reading is the interpretation of the symbolism of the printed page into equivalent images, ideas, thoughts. The real reason, then, for teaching reading is that the child may gain the power to get the thoughts which others have expressed in written form. But why do we wish the child to get the thoughts which others have expressed? So that the child may be able to think for himself, is the reply. And why think for himself? So that he may more fully enter into the life of the race, so he may be more broadly and more genuinely social.¹

Writing is a device for talking to an absent person, for rendering permanent the thought that would otherwise be fleeting. Writing is just the reverse of silent reading, viz., a process of conveying thought to others by a mark symbolism. If there were no social necessity for thus expressing one's meaning, there would soon be no writing in existence. Spelling is just the conventional way of joining certain marks together to make words. It is not a thing which is worth while for its own sake—it is but a means to an end. When writing and spelling are

¹In oral reading the element of conveying the thought obtained from the printed page to others is added to reading.

isolated, the child loses interest in them, for they then become purely formal things.

Grammar is the body of organic uniformities that appear in a language. There are just two fundamental questions that are answered by grammar, viz., What does the sentence mean? What is the function of the separate elements of the sentence in expressing the meaning of the sentence? Grammar thus includes a study of sentence-analysis (word, phrase, and clause relations), and of word variations. However much one may know of the details given in many grammars, the only practical value of grammar is the ability one gets from his study of it to grasp the thought of a sentence at a glance and to frame sentences that express thoughts accurately. The social reference and utility of this power to get the thought instantaneously and accurately and to convey it accurately are too obvious to need further comment.

Drawing and color work are not wholly ends in themselves. The ability to draw something that looks like a cat, a landscape, a house, or a Chinaman is valuable as a means of conveying thoughts about things to others. If it be held that through drawing objects the child comes to observe the objects more closely and thus to know them more adequately, the question still remains, Why is it desirable that the child should know the object more adequately? An intimate knowledge of things, ability to draw, and ability to paint may give rise to satisfaction that is purely individual. But even through such individual and egoistic activities the person is being formed so that his attitude towards others is changed thereby. The meaning and value of the drawing and art of to-day could never be experienced by one whose life had been solitary. So, while conceding the egoistic element in all art, we must also recognize its power of forming and revealing social attitude.

This rather long discussion of language is for the purpose of showing that all the things considered here have really arisen out of social necessities in the life of the race, and that by gaining

control of them the child is enabled to enter more adequately into the life of the race. The fundamental motive in teaching them, then, must be effective social participation.

(b) Just as soon as barter gave way to money-exchange, definite units of measurement for different kinds of things arose. It needs no argument to prove that arithmetic developed, as a body of organized knowledge, from social needs. Nor does it require an argument to prove that the really serviceable arithmetic of to-day is that which is an aspect of social relationships. The bearing of these facts on method is important, but their bearing upon the view which the teacher ought to take of the subject itself is more important. The elimination of methods of computation that are no longer socially serviceable shows the responsiveness of the subject, despite the traditions of the school, to social demands. The social origin of arithmetic and its obvious social relationships are sufficient proof that the real purpose in teaching it in the elementary school is its socializing influence.

(c) Geography was originally a writing about the earth, an account of what explorers really knew about the earth and an assorted collection of speculations about what they did not know. Maps were a shorthand way of telling graphically what was known about various countries. Gradually, as commerce expanded, it was deemed of value that as many as possible should become intelligent about remote regions and customs. Trade increased and places to know about multiplied. The location of places on the map became the great geographical aim. Map drawing was a device introduced to assist children in memorizing location. The social consciousness of even the most conservative communities rebelled against this dreary treadmill of insignificant repetition, and any change whatever was welcome.

The physiographic ideal of geography, the consideration of those great forces which are constantly operative upon the material of the earth, replaced in many schools the dreary round of memorizing meaningless things. Geography was defined as

“the Science which treats of the earth in its relation to man,” or “the earth as the home of man.” But in the time allotted to it, the geography class never got beyond the earth nor very far into it—much less to man. The character of the soil, climate, and seasonal changes greatly influence the occupations, ideals, and social institutions of men. On the other hand, the influence of men upon natural things merits consideration. What geography deals with is really a mutually correlative interdependence of man and the earth. Geography deals with the concrete adjustment of man to the earth. What geography includes is a very simple matter, viz., how men adjust themselves to nature so as to make a living; and, having made a living, how men adjust themselves to each other so as to live.

If one should ask an advocate of the physiographic study of geography, “Why should the child study geography?” the answer would be either that it is worth while for the child to know these things for their own sake, or that by knowing these things the child can understand how men adjust themselves to the earth. But what makes a knowledge of physiography “worth while” to the child? The answer to this question will commit one to the apparently indefensible knowledge view of the aim of education or to the social view.

Or, again, if adults ask themselves what of real worth they learned from their school study of geography, they will answer that they learned the typical ways in which men adjust themselves to nature, and how men live in organized societies. This answer reveals the educative aspect of geography and shows its true social reference. It is because teachers have felt the need of a school subject dealing with the essential and typical ways in which men wrest a living from the earth and with the typical ways of social living that the content of school geography has changed.

(d) What is called history is just this human adjustment to the earth and to social groups as it was made by us yesterday, by our fathers, by our forefathers, by any and all the social

groups that have lived in the past. Civics is but the organized governmental efforts which are made so that men can live together peaceably and decently. Now, it is obvious that not all history is equally worthy of preservation and study by subsequent generations. But, whatever be our criterion of selection of the aspects of history that merit emphasis, the value of the past adjustments of the race, to the individual who learns of them, is to be found not in the knowledge itself, but in the degree to which the individual is thereby rendered more efficient socially. The unconscious recognition of this criterion of values is the force that has changed the content of our elementary school histories from a collection of dates, statistics, and accounts of battles to a systematic account of how society has evolved.

(e) But men dream about social relationships as well as participate in them. These dreams of possible social adjustments, with all the play and interplay of motive and result, constitute the realm of literature. Even the fairy story with its moral detached has a higher educative value than the pleasure of the child in it or the development of his imagination by means of it. This higher thing is a budding sense of how people ought to behave in social life, and a beginning of action in harmony therewith. The blood-and-thunder story is demoralizing just because of its influence on the child's sense of himself-as-related-to-others. Often the value of literature as a means of individual culture is emphasized, but there can be no true culture that is wholly, or even characteristically, egoistic. If through literature one falls in love with fields and brooks, his attitude toward others is thereby changed. And if "literature is a product of life," then the study of it ought to mean more life to him who studies it. In fact, it is just this relation to life that makes literature to be what it is.

(f) All modern schools include some forms of construction work in their courses of study, either as busy work or as a regular part of the work of the school. The first construction work in

schools was probably as pointless as was Pestalozzi's pupils' counting of the cracks in the plaster of the ceiling. Much of the paper folding of fifteen years ago was clearly of this type. But when construction work came to be considered as a means of education its character changed greatly. The change was in the direction of having pupils make those things that have a relation to life. Weaving, *per se*, has given place to the weaving of rugs, hammocks, and receptacles of various kinds. With the construction of things that have a social relation comes the possibility of growth into a clearer and clearer social consciousness.

(g) Emphasis upon the knowledge ideal of education and upon the study of words as the best method of gaining knowledge, inevitably led to a neglect of the natural world. Three different groups of reformers attacked the schools. One group held that the economic value of a knowledge of nature's ways is sufficient to warrant a study of nature by pupils in the elementary school. Another maintained that the æsthetic enjoyment that results from a close companionship with nature justifies putting nature study into the curriculum. The third group, composed chiefly of trained scientists, urged that the mental value of the "scientific method of thinking" is so great that all elementary school pupils should acquire this method of thinking. To these separate claims must be added the influence of the writings of Comenius, Pestalozzi, and Froebel.

It is no wonder, then, that there is the widest diversity of material included under the terms *nature study* and *science*, and that there is the greatest diversity of opinion regarding the values of the study. The further fact that most people rely upon "specialists" for their views upon this subject, renders it difficult to write upon it without assuming the attitude of a partisan.

Economic serviceableness, æsthetic enjoyment, and scientific thinking have a value only as by means of these things the individual becomes socially efficient. If one's æsthetic enjoyment of nature leads him to turn his back upon mankind and

to lose himself in nature so completely that he loves a crippled bird more than he loves crippled children, if he loses himself in adoration of a "parasite upon the intestine of an earthworm" so completely that he forgets to use his scientific thinking with respect to matters of great social significance—well, savagery would be preferable to social life among people of this type. "The truth shall make you free," not of its own intrinsic worth, but by its applicability to life. Against æsthetic enjoyment in its right relations to life, no word of criticism can be uttered; but æsthetic enjoyment of nature should dispose one to see more of beauty and loveliness in mankind. The attainment of the power of scientific thinking should awaken a desire to serve one's fellows by means of it. The economic returns of a knowledge of how best to fertilize a "sour loam" should result in a higher ideal of life for the farmer who pockets the returns.

It is possible, of course, to study natural things in their own relations and with no reference to the present needs and the ideals of men; but such a study belongs, if anywhere, to a later period of the individual's development. If the power of scientific thinking could be developed only by a consideration of a portion of nature unrelated to man, such a study would be defensible in the elementary school. There is, however, ample opportunity for scientific thinking on nature as related to man to occupy completely the elementary school period.

If the above position be defensible, it follows that the nature study of our schools should be determined upon the broad grounds of social reference rather than upon the narrower grounds of economic value, æsthetic enjoyment, or mental discipline.

This entire section is a brief and imperfect effort to show that the studies of the elementary school are essentially social in their reference.¹ The elementary school, in an imperfect and general way, includes those things which the social group re-

¹ In *N. E. A. Proceedings*, 1901, pp. 124-131, there is a similar treatment by Prof. George E. Vincent.

gards as a minimal prerequisite to effective social participation. Therefore, as social conditions change within the group, there is a correlative change in the content of the curriculum. If, as Dewey has said, the changes in the curriculum are due to social pressure, it must be that a more or less clear social consciousness supports and warrants the curriculum all the time.¹

§ 16. AN ANALYSIS OF THE MATERIALS OF EDUCATION AS INSTITUTIONS, INDUSTRIES, SCIENCES, ARTS—TOGETHER WITH THEIR SOCIAL REFERENCES.

This whole matter of the social reference of the materials of education may be looked at from a different point of view. In the previous section the social reference of the separate studies of the elementary school curriculum was shown. In the present section the materials of education are to be analyzed as consisting of (a) Institutions, (b) Industries, (c) Sciences, and (d) Arts.

(a) Institutions—The child is born into the family and grows through it to the social groups which are called the community, the school, the state, and to the various institutions supported by the community and state. An institution is simply an organized method of social behavior. Whether he live in savagery or in civilization, the child can not escape institutional life—he must come into organic relations with his fellows and must acquire a method of behavior with respect to them. Institutions change with the centuries and even from year to year; old institutions pass away and new ones arise; and yet, regarding the life of any one person, they are fairly constant.

Now, if it be true that social life centers about institutions, it follows that social participation is possible only by participation in institutional life. It is not necessary to participate in all institutional life, for the images derived from participation in some institutions enable one imaginatively to construct others in terms of actual participation.

1 *N. E. A. Proceedings*, 1901, pp. 332-348.

But institutions have a history; they have evolved. Therefore, to know the institution fully, one must re-live its life—to be genuinely social, one must know and appreciate the history of society. Moreover, institutions are developing now, and hence the duty of the individual to influence wisely the present and future of the institutions of society. To be fully civilized is to participate intelligently in the present institutional life of the race and to help that life forward. The extent to which one can enter sympathetically into the institutional life of others and help that life forward measures his genuine civilization.¹

(b) Industry—Man's wants are of such a nature that he must put forth effort to obtain that which will satisfy them. Remote as well as immediate wants demand satisfaction. The more man knows and the broader and deeper his feeling, the more he wants. Good food, comfortable houses, beautiful things, the ownership of broad acres, a bank account, etc., are the products of labor. The putting forth of energy for the attainment of a given end is industry. "Industry conquers the world," transforms the world of elements into forms that produce satisfaction. Every individual either produces, directly or indirectly, the utilities which he uses to satisfy his wants or else he lives on the bounty of others. So fundamental is this idea of self-support that he who has not learned it lacks something of the human touch.

As civilization advances, the division of labor renders each person's industrial task less inclusive and more specialized. There is a clear economic gain in the division of labor, and a loss in breadth of industrial accomplishment and social sympathy. If there be naught but economic efficiency sought in the industrial life of the individual, he becomes "a mere shred of humanity"—a "Man With the Hoe." A broad acquaintance with the typical forms of human industry is desirable on social grounds, for with these typical forms of industry comes a sense of their social reference. The construction work of elementary schools

¹ Rosenkranz, *Philosophy of Education*, p. 140.

(including manual training) aims not at skill, or economic efficiency, primarily, but at genuine socialization.

Industrial effort becomes the basis for mental work, for concentration, for thinking. It is almost impossible for one who does not know how to work to learn how to study, for study is work. Versatility in typical industrial effort is the basis of mental versatility. That so many successful men in business and professional life have had wide industrial experience is more than a coincidence.

Granting the attainment of skill in a few forms of industry, it is readily seen that the broader one's knowledge of industrial processes, the broader is the reach of his social sympathy, the keener is his judgment of the true relations of things, and the more discriminately ethical may his conduct become.

Industry has, of course, a social reference. A man does not work simply that he may *live*, in the physical sense of that term. Life is more than the maintenance of those relations which enable men to keep on breathing and walking. To have social contact, to mingle with men, to feel the presence of those who love the things that we love, to feel that we are of service to our kind—this it is to live:

(c) Science—Through his contact with nature, fellowman, and institutions, man finally discovers in them uniformities, or laws, or principles. Similar or related principles are slowly grouped together into unities called sciences. Science is the form which knowledge, as divorced from the feeling and volitional elements of concrete mental activity, tends to take. A science is a body of principles having an organic connection among themselves, as psychology, biology, grammar, algebra, etc. Science is the universalized element of racial experience.

Herbert Spencer has shown in a conclusive way that the sciences have been developed from the arts. A need exists; some method of satisfying it is found; this method is perpetuated by tradition and social habit; with the increasing division of labor, the method in use becomes more skillful; finally, the causal

relations between the various steps in the process are known and controlled; this knowledge is science and this control is industrial art.

In order to enter fully into the life of the race, one must become scientific—must construct, or re-construct, the knowledge which has been organized by the race. This task soon becomes too great for any one person to achieve, and so a selection of science material is made. The principle of selection is social serviceableness. For example, a boy who is to become a farmer would profit more by a study of the chemistry of the soil than by a study of astronomy, if he could study but one. But the real social serviceableness of what may be taught one is practically impossible of determination in advance of his actual life development. We can only say that the race has certain fundamental interests from which certain sciences have arisen, and these the child should learn for he has, or there may be developed in him, these racial interests.

(d) Arts—The term *arts* applies to the concrete doing of things in a certain way, whether this concrete doing be controlled by principles or not. There is an art of printing, an art of shining shoes, an art of handling a saw, an art of waxing floors, etc., etc. Then there are the mechanic arts in which certain principles (science?) control the steps in the concrete doing; and the fine arts in which certain principles that concern the production of the beautiful control the original production of things that satisfy the æsthetic sense. Reading, writing, spelling, computation, map drawing, etc., are school arts. The making of gasoline engines is a mechanic art. The painting, the “Sistine Madonna,” is an example of fine art.

The relation of what are here called arts and mechanic arts to social situations is evident. Nearly all arts are imitatively acquired. Mechanic arts imply imitation and scientific thinking. The fine arts are the realm of originality and invention, but the function of imitation and scientific thinking in them is clearly recognizable. And without social copy, social need, and

social acceptance of the product there would be no arts at all.

The purpose in this section was to show that all institutions, industry, science, and arts arise from social needs and that by participation, performance, and reconstruction of them the child becomes truly socialized. This fourfold classification includes all the materials that have ever been used for educative purposes, and in every one of them the social reference is clear and unmistakable.

§ 17. THE MATERIALS OF EDUCATION AS EQUIPPING ONE TO
ACT EFFECTIVELY AS SUBJECT TO (a) NATURAL LAWS,
(b) INSTITUTIONAL LAWS, (c) ETHICAL LAWS,
AND (d) SPIRITUAL LAWS.

The emphasis may be changed a little by saying that education is the process by which one comes to act effectively in any relation whatever.

(a) Natural laws—The individual is obviously in relation to the natural world. This world is one of law and order. If the child simply followed the impulses that arise within him, he would never become an adult at all. A young child is perfectly ignorant of the existence of the law of gravitation and will walk off an elevated place with no thought of possible injury, and he does not know that a hot stove will burn him. These illustrations are typical of the child's lack of knowledge of natural laws. One phase of his education is the learning of how to behave with respect to these fundamental natural laws.

(b) Institutional laws—The social world with its manifold institutions is just as truly a world of law as is the natural world. Leaving out of account one's adult duty to help life forward, the child must learn to conform to institutional laws. He becomes truly human by such conformity.

(c) Ethical laws—Back of mere social conformity is the question of why one conforms—back of mere action is the matter of motive. The presence of motive marks the rise of ethical consciousness. The good, whether it be external and objective or

internal and subjective, is not capricious. Consciously to conform one's life to the good as one conceives it, is to be obedient to ethical laws. Ethical laws, so far as they have a content at all, relate to conduct that concerns others as well as one's self. The Golden Rule with the "others" left out is meaningless. All ethical action, however, is an end in itself and never a means to an end. If one follows the Golden Rule for the sake of the reward which comes from action in harmony therewith, his conduct may be prudential but it is not moral.¹

(d) Spiritual laws—Religion is perhaps best described as one's belief about his relation to the Author of the universe and also the various aspects of one's thinking and conduct which are influenced by this belief. Religion implies a goodness, right, justice, etc., that exist independent of all institutional and human interests. It is thus beyond the confines of ethics, for it systematizes and universalizes the things which are merely implied in ethical conduct. The reflex and vitalizing influence of religion upon ethics and institutional life, therefore, is as great as is the influence of these things upon religious conceptions.

Whether this analysis of the realm of possible individual adjustment into natural, institutional, ethical, and religious laws be exhaustive or not, it will make it clear that he whose life is in harmony with all these laws is truly educated. If this be true, then the process of education is one of becoming socially efficient by living up to the measure of these laws, and the materials of education are those things which equip one thus to act effectively. All these laws have a social reference and a social value. The ideal social individual must conform his life to these laws, not slavishly (though this may be a necessary stage in the educative process), but willingly.

§ 18. THE MATERIALS OF EDUCATION MAY BE DESCRIBED AS INCLUDING ALL THAT ENABLES ONE TO MAKE AN HONORABLE LIVING BY SERVING OTHERS HELPFULLY.

Self-support through social service is the duty of every

¹ Dewey's *Psychology*, Chapters on Prudential and Moral Control, pp. 387-416.

mature person. If this be one's duty, then all the things that contribute to this end are really materials in that person's education. If it be one's lot or choice to be a carpenter, the tools, the bench, the various woods, the instruments for measuring buildings, the nails, the locks, hinges, etc., are really teachers, are really materials of education. There is nothing in the wide world—from soil to theory, from brick to sentiment—which is used in making an honorable living but that may become material in some person's education. Everything that enables a stone mason to make an honorable living by serving others helpfully is really the material out of which he quarries or builds himself. One should not merely make an honorable living—he should live honorably. All forces, sunsets, floating clouds, flowers, poems, philosophies, all things through whose contact life assumes a higher tone are educative materials. The plaintive song in the twilight, the symphony, the moan of the winter wind, the ripple, or the tide may be the source of emotions that color subsequent life. All that is capable of influencing life attitudes is educative material.

This view does not belittle books as educative material, but it does recognize the incontrovertible fact that other things are as truly educative material as is the book. It is possible that one through a knowledge of books becomes capable of serving others helpfully, but this is not the exclusive avenue of gaining the power of social service. In fact, it is only as books are a summary of a wide range of concrete experience, into whose meaning the child grows by his study, that they are valuable at all. *Realities only are educative.*

It is thus evident that the so-called studies of the school are educative materials, but it is equally evident that they are in no sense the exclusive educative materials. The very fact that teachers try to relate these school subjects to the lives of pupils is ample proof that adequate and effective living is the great thing sought by the schools. The view here emphasized formu-

lates a standard in terms of which relative educative values are to be estimated, viz., serviceableness to honorable living.

§ 19. KNOWLEDGE, CHARACTER, AND CULTURE SHOULD BE INTEGRATED PHASES OF THE EDUCATIVE PROCESS, AND THESE ELEMENTS SHOULD COME FROM THE USE OF ANY OF THE EDUCATIVE MATERIALS.

Knowledge, though frequently adored, is seldom understood. If one knows the boundaries of Switzerland, he can reproduce them at will. If one knows how to find the volume of a regular solid, he can reproduce the necessary steps whenever he chooses. If one knows the Vicksburg Campaign, he can reproduce mentally the plans and events of that historic movement. In all these cases the element of *mental control* appears and also the element of mental synthesis, for there is the putting of things together in a series in the very act of control. Knowledge may thus be defined as a controllable series of mental syntheses. We may also assume that *a thing is a body of relations*. To know a thing, then, is to reconstruct the relations which constitute a thing to be what it is.

There are, however, degrees of control. For illustration:—A man was once able to give, understand, and apply to *Cæsar's Commentaries* the rules regarding the use of the subjunctive as these were given in Harkness' *Latin Grammar*; but he is unable to do this now. A person once learned to diagram sentences and this he is still able to do. These illustrations describe transient and permanent knowledge. Permanent control arises through what we call use, or *application of knowledge to the varying situations of life*. It is *use of knowledge* that produces an organization of the self. It is, therefore, possible for knowledge that is itself transient to be truly formative, though not in the sense of formal discipline.¹ The real purpose, then, of having children learn is that through the mental control implied in knowledge a desirable organization of the self may result.

¹ Hinsdale's *The Dogma of Formal Discipline*, in *Educational Review*, Vol. 8, p. 128 ff, and also in his *Studies in Education*.

Now this desirable organization of the self is exactly what is meant by character.¹ Therefore, through the acquisition of knowledge, character is formed. What one knows becomes an integral part of himself through its expression and use. Hence, whether desired or not, children's characters are being formed by their plays, games, studies, etc., as well as being revealed by them.

If the self that is thus being formed gives evidence of being in essential harmony with all the fine things that help spiritual life forward, the self is cultured. There is no limit to culture, and, hence, no one can tell how much another has of it.

Culture is not, as many people seem to suppose, a controllable veneer which can be imitatively put on. It is rather the power to enjoy those forms of activity that relate to mental and spiritual as opposed to physical welfare. From the psychological point of view culture is mental activity in terms of ideals, meaning by ideals "those forms which we feel our concepts would take if we were able to realize them in a satisfying degree of harmony, proportion, universality, and significance."² When the concepts which arise through the use of knowledge are projected into ideals, or interpreted in terms of ideals, culture begins.

It is the stopping with the simple control that renders most knowledge of so little value in character formation, and it is the failure to interpret things in ideal ways that prevents culture from being integrated with knowledge and character. If a blacksmith interprets his work in terms of its broad relations to human welfare he is cultured, but if he interprets it simply in terms of present control or simply as a means of making a living he is lacking in culture. This shows why the so-called practical things are lacking in culture elements, and why so many practical men are destitute of culture. This view also shows

¹ Character is what one is, but it has also come to mean a self that is essentially good.

² Baldwin's *Elements of Psychology*, p. 283.

why culture comes often only with wealth, and why it is frequently the accompaniment of leisure.

The effort to establish social cast on the basis of knowledge of a certain exclusive and narrow kind has resulted in partially divorcing the schools from real social life ever since democracy, as an aspiration, first found lodgment in social consciousness. And, so, too, the effort to establish an aristocracy of exclusive culture has been constant and futile; futile, because culture, in a democracy, can never be exclusive; constant, because the world is always supplied with people who "forget the base degrees by which they did ascend."

Knowledge, culture, and character; no one of these can be what it should be without the others; undue emphasis upon one spoils the others, for even motive should be supplemented by knowledge and culture. Therefore, the proper use of any of the educative materials should result in the formation of a self that is wise, ethical, and cultured.

In whatever way the materials of education be considered, it is evident that there is in the material both a mental activity and a form by which this mental activity is expressed. The race has expressed its mental life in symbols, in industry, in art, in science, in institutions, etc. The child must re-make, re-discover, re-invent, re-believe, and re-live this race inheritance; and, because of his own social environment, must gain the power to express his mental experiences to others. Knowledge, character, and culture cannot be transferred to the child ready-made. Each person, to get these things at all, must produce them for himself.

This inner, mental activity is the content—the meaning—the significance of things. The various ways in which this content may be expressed constitute the form. In the evolution of the race, the form has always followed the content, but the pedagogical blunder of all ages has been the implicit belief that the child can get content from form.

In this chapter, the materials of education have been analyzed in various ways to reveal their true social and socializing nature, and thus to set in clearer relief the social view of the process and aim of education.

CHAPTER V.

METHOD IN EDUCATION, OR THE RE-CREATION BY THE CHILD OF HIS RACE INHERITANCE.

Having now discussed the aim, the process, and the materials of education, the problem arises, How does the child re-create (mentally and objectively) his race inheritance? The aim of education is made real just to the extent that the child becomes socialized, becomes a good citizen, a moral character, etc. The process of education is the removal of a tension, an othering, an organization of acquired habits of conduct and of tendencies to behavior, the building of a world, etc. The materials of education have a social reference—especially the materials of elementary education. The social group wishes to control and direct the process of education. The method of education must be based on the way in which the child's mind develops. This brings method back to psychology for its foundation.

Method of teaching is simply the reverse of the process by which the child's mind learns a new thing, for teaching is causing another mind to learn. The mind learns by experience, by its interpretation of the new in terms of the related old, by working over the data given through sense-contact with the world, by unfolding its own inner and innate powers, by realizing its nature by expression, etc. Every answer to the question, How does the mind learn a new thing? is really an analysis of the term *experience*. And so such an analysis is now entered upon, but it is hoped that the treatment of it under separate sub-topics may not be interpreted as a concession that there is no fundamental unity in mental experience.

§ 20. INVOLUNTARY EXPERIENCE, OR MENTAL ACTIVITY RESULTING FROM MOVEMENT.

The child is born with a bodily organism such that motor activity is the inevitable result of contact with the things that make up his environment. When a few days old the child gives evidence of a consciousness of having acted. *How* consciousness is connected with the nervous activity of the brain, no one knows; but *that* it is connected in some way, no one can deny. There are various forms of pre-conscious motor activity that may be specially named and described in this connection, primarily for the purpose of showing how through involuntary experience the mind develops.

1. The nerve-cells may reach so high a state of internal tension, or of unstable equilibrium that a discharge of the energy outward occurs. The infant's arms and legs move when one can assign no objective stimulus as the cause. Such internally initiated movements are called spontaneous. The nervous system is so arranged that whenever a muscle acts, sensory nerve-endings in the muscle are stimulated, and so every spontaneous movement is the cause of in-going impressions that may reach the brain. If these in-going impressions have sufficient intensity, they will be the occasion of a consciousness of having acted. In this way the child's consciousness may be developed to a limited extent.

2. The nervous and muscular connections already established at birth are such that many peripheral stimuli of sufficient intensity are inevitably followed by definite responsive motor activities. All such motor activities are called reflex. It is held by some psychologists that there can be a consciousness of the sensory stimulus directly, while others hold that the consciousness of the sensory stimulus (or that which is referred to the sensory stimulus) is an inference from the consciousness of the motor response to the sensory stimulus. The phenomena of reflex action support the latter view, and thus strengthen the

view that, genetically considered, consciousness arises on the basis of motor activity and develops with it.

3. There are, however, many stimuli that appeal to some special sense organs and are not followed by any definite, predictable motor response. The stimulation seems to travel inward to the nerve-centers and then to be deflected outward in—now one channel and now another. Sometimes the whole muscular system is affected, because of excessive central discharges. Such action is called sensory to distinguish it from the reflex and spontaneous action already described. Regarding sensory consciousness, one may say that, whether consciousness follow immediately upon the stimulus or mediately upon the motor response, consciousness is organized and develops because of the motor element in sensory experiences.

4. The nervous system is, at birth, so organized that tendencies to discharge in some direction or other exist in it. Every additional experience, while it may modify the existing nervous organization, leaves the nervous system with a tendency to discharge in a certain way. This tendency is impulse of the nervous type. If this conception be carried over to consciousness, it is evident that any present organization of consciousness inevitably means tendency to mental action of some kind or other. This mental tendency is impulse of the mental type. All impulse, then, is tendency to action because of present organization. Impulse naturally leads to action of which one is conscious only after the action occurs, and, hence, mental development that arises because of impulsive action belongs to what has been called "involuntary experience."

5. A pre-natal connection between a sensory nerve-ending and a muscle enables one to understand reflex action and sensory movement. If now one thinks of a number of sensory nerve endings connected in a very complex way with a series of related muscles, and this latter series having such connection with still other muscular series that a single stimulus may start the whole series, one has the physiological conditions of instinct. All

cases of instinct imply a present complexity of movement and also a serial complexity.¹ A bird's building of its nest is usually cited as instinctive. To fly to a distant place, get a twig, and put it in its proper connection with other twigs is a complex act. To keep at this process day after day, to use finer twigs and even feathers to line the nest—this is a serial complexity. Whether instinct be reducible to a combination of impulses and reflexes is of no importance here. There are such complex series of movements performed by many animals, and by means of them the consciousness of the animals is developed.

6. Granting the inborn nervous structure already outlined, and granting that the complexity and connectedness of this nervous structure is increased by the kinds of experience already outlined, we are in a position to understand how a stimulus, presented to a complex structure, may provoke a strong likeness to a conscious response. It is widely known that some people when asleep respond in a seemingly intelligent way to questions that are asked them, provided only that the questions be of a kind that the person has already dealt with. This phenomenon is called "physiological suggestion" for the reasons just explained. There is no present consciousness of the answers and no subsequent memory. The influence of such responses in the formation of habit or tendency to action, however, is perfectly evident.

7. Through the sensory-caused actions already spoken of a structure and tendency are produced. This structure and tendency may exist either physiologically or mentally, or both. Physiological suggestion, as illustrated above, seems to have no mental activity in it at all. But when a child learns to go to sleep when rocked, there is a mental response to the stimuli of the rocking. A child soon learns that a certain sound on the stairs means its father's arrival. Here there is a sensory stimulus that awakens, or excites, or causes the revival of a previous consciousness that was connected with a similar stimulus. All such suggestion is called "sensori-motor suggestion" because

¹ Baldwin's *Elements of Psychology*, p. 328.

the stimulus simply connects with a previous consciousness that was motor in its origin. Through sensori-motor suggestion the child's mind is formed into certain definite modes of responsive activity.

Nearly all the tricks of animals are just of this sensori-motor type. Pain is followed by an action, and the trainer then gives some pleasure. A sign from the trainer means incipient pain. The thought of the pain is connected (through repetition) with the action and its subsequent pleasure. Either, then, because it can not help it or because of its desire for the pleasure, the animal performs the desired activity. When the trick has been learned, the sign from the master is a sensory stimulus that suggests previous experiences and that results in the performance of the trick.

8. The same principle of suggestion is seen in "ideo-motor suggestion." What are called ideas are associated with symbols or with certain stimuli. The recurrence of a stimulus or the symbol recalls the idea with all its associates of action and feeling. Often, as one watches small boys playing ball, he catches himself making a series of incipient movements much like those the boys are making, and yet these movements are not imitative. The visual impressions give rise to an idea in consciousness; the idea reinstates its former motor accompaniments, and one is then conscious of certain incipient, even diminutive, movements and feelings. When one sees a bicyclist wobbling, he is very likely to put out his feet as he has done in the past to prevent his own falling from a bicycle. At a basketball game, former players frequently play in this incipient way. The child's desire for a drink at night is often intensified by the motor tendency of ideas that are awakened by suggestion.

What is called the connotation of words is really nothing but suggestion. The words of our childhood's years have been attached to varied experiences, and these experiences had a higher emotional intensity than do most of those of later life. Riley's *The Old Swimmin' Hole* and Field's *Little Boy Blue*

really touch us because of our previously organized experiences. Browning's poetry, for a similar reason, appeals only to those who have reflected deeply on life's problems.

These various forms of involuntary activity have been described to show how the mind, or consciousness, develops in response to the stimuli of the environment. In all the cases cited, there is a motor response to a stimulus. If there be any consciousness at all, it is primarily a consciousness of this motor response and secondarily of the stimulus. The brain structure is modified by experience and thereby acquires both organization and tendency. Consciousness is organized by and through such experiences as have already been sketched, and thus takes on structure and tendency. Consciousness is not, even at this stage of its development, simply a picture of the world of stimuli, nor is it simply the mechanical or dynamic resultant of the stimuli that have played upon the brain. The most we can say is that the character of the experience (and experience is the mental response to a stimulus) is dependent upon the stimuli of the physical environment.¹

In all the experience here roughly and imperfectly sketched there seems to be nothing but the sway of the law of the conservation of energy. Stimuli are followed by motor responses; consciousness attaches to some of these responses and not to others, and seems to attach to those of the greater intensity. The motor response is greater than the stimulus, and this is due to the fact that the effect of the stimulus upon nerve or nerve center is to destroy its equilibrium and thus to liberate energy.² Matteucci found that in frogs the ratio of stimulus intensity to motor-response intensity is 1 to 27,000. Consciousness, whatever it be in its essence, can develop only under the condition that stimuli are present. Cherries can grow and ripen only under proper conditions of soil, climate, heat, and moisture; but cherries are more than these things in any definite collective com-

¹ The body is a part of the environment as here considered.

² James, *Briefer Course*, p. 120.

bination. If cherries were simply a collective combination of these things, we should be able to gather them from hickory trees, gooseberry bushes, and ragweeds. And so, while mind can develop only under certain conditions of brain and stimuli, it is always more than these things are.

§ 21. CONSCIOUS IMITATION.

The organization of mind that results from the kinds of experience thus far outlined exists, as has been said, as structure and tendency. Because of what is known of the activity of the mind, two assumptions must be made in order to explain all the known facts. These two assumptions are:

1. The mind has the power to dissociate experience into parts, segments, fragments.

2. The mind has the power to combine these parts, segments, or fragments of experience into new wholes.

It is also assumed that the mind can do the things implied in these two assumptions either consciously or unconsciously. The simple, ordinary flow of experience tends both to break up and to unite previous experiences. This analysis and synthesis may occur and one be conscious only of the result, or one may remain unconscious of the result, or the process may be preceded by a consciousness of the result as it is to be.

In the previous section it was shown, in considering sensorimotor and ideo-motor suggestion, how this double process of analysis and synthesis may go on unconsciously and be followed by a consciousness of having acted. It may be helpful to use a more familiar terminology in this connection. Whenever inner mental life takes on the form of an objective presentation, be it material stimulus or suggested idea, the activity is an imitation of that objective presentation or suggested idea. If this imitation occurs attended only by a consciousness of the result, it is unconscious imitation. If it occur preceded by a desire to achieve an end, preceded by conscious analytic and synthetic processes, the activity is called conscious imitation.

Conscious imitation has two phases, viz., an inner, mental synthesis which also implies analysis, and a motor synthesis which implies the synthesis of previously dissociated motor elements. In the simpler forms of conscious imitation, these two phases are parallel and each implies the other. In the higher reaches of symbolism, one may exist without the other. By conscious imitation pupils can learn how to spell and pronounce the word *synderesis*, and yet make no new mental syntheses. This simple motor aspect of conscious imitation is often called "bare," or "mere," imitation. This sort of formal, wooden, lifeless imitation is possible only when the activity is one that is concerned with an arbitrary symbolism. One can not imitate a real activity, such as that of a gardener, without getting more than the mere formal aspect of the activity.

In fact, it is by the imitation of real, human, social activities that the child becomes human and social. The objective stimulus or situation awakens a desire to reproduce it for one's self. Efforts follow and whether the end be secured or not, there is a changed self—changed as regards its structure, organization, power, tendencies, and consciousness of itself. In conscious imitation, previous elements of experience are related and synthesized because of their felt fitness in reproducing for one's self an objective presentation or copy.

A fifteen month's old child watches the movements of her mother's lips as the latter sings to her. The child puts her fingers on the mother's lips and then tries to move her own. Each imitative effort brings a new sense of selfhood, a new integration of power and tendency. All this accords with the various descriptions given of the process of education, but it waits upon the presence of the copy. Many of the adult's mental attitudes have been thus imitatively acquired, and many things can be acquired in no other way. This does not mean that imitation is the only or exclusive method of mental development, but it certainly is an important method; and whenever a symbol is to be connected with its appropriate idea, imitation,

based on association by contiguity, is the only method of forming the connection.

§ 22. DISCOVERY.

Things seem to exist in certain relations to each other, and the mind establishes within itself relations which are assumed to correspond to the objective relations of things. Several of the ways in which this is done have already been discussed, and other methods of mental development are now to be considered.

The mind makes many syntheses and finds some of them confirmed by objective relations. Syntheses thus confirmed by objective relations are called discoveries. To discover is to uncover, or lay bare, and, hence, one can, in any deep sense, discover only what exists already. Many of his syntheses are regarded by the child as corresponding with objective reality, but are later found to have insufficient confirmation, as is seen in the child's belief in the reality of the rainbow.

Discovery is sometimes used in the sense of the mere accidental finding of something, as when one speaks of the discovery of gold in California, of copper in Michigan, etc. No thinking preceded such accidental finding and very little followed directly, except as regards the location of the things in question.

Some chance discovery, however, is of the causal type and excites thinking. The Bessemer process of making steel was discovered by chance while air was being forced into molten iron for a wholly different purpose. The significance of the discovery for the individual intensifies the vividness of the causal connection and often makes it a lasting one. For example:—A young housewife put a can of beans into the oven to heat, and upon taking them out, at once opened the can with a can-opener. The hot liquid spurted upward and burned her face. The great fact that liquids expand with heat was by this chance discovery more firmly established in her mind than it had been by her study of physics. All chance discovery is forced on us, and, lacking in significance, much of it is soon forgotten.

In purposed, or planned, discovery, however, the presence of the purpose and of the hypothesis indicates a great complexity of mental operations. The hypothesis is a "mental construct" in either image or conceptual terms, and is dependent upon past experiences. For example, an electric doorbell fails to ring, and one wishes to discover what is wrong with it. He may say to himself that (1) the push-button may be out of order so that no connection is made; (2) the connecting wires may be broken; (3) the battery may be "dead;" (4) the bell may be out of adjustment. These hypotheses are based on previous experiences, and one forms an hypothesis because he can not tell *a priori* what is the matter with the apparatus. One knows, however, that batteries "run down," and so he first tests the battery. If the battery is all right, the next hypothesis relates to the bell itself. If one change the adjustment and the bell then rings, he concludes that he has discovered the cause of the bell's former failure to ring. But after one has fixed the armature several times within a year he goes to it at once when the doorbell refuses to ring. The hypothesis as to the trouble becomes a single one based upon past experiences. The maid, however, probably simply knows that the bell does not ring—she has no theory as to why it does not ring, and it is doubtful if she would ever discover the cause.

In purposed discovery, it should be noted, the relation of the result to the hypothesis is noted at various stages, and thus the mental activities are more firmly and clearly associated in the mind of the discoverer. For example:—A child goes out to find in what kind of soil toad-stools grow. Having found some toad-stools and examined the kind of soil in which they are growing, he forms an hypothesis which is, be it supposed, verified by his later searchings. This fact enters more firmly into his system of ideas than it would have done had he been told outright. This forming of many associations is simply the process of allowing things, in the language of Supt. N. D. Gilbert, to "soak in"; it is the process by which the knowledge is absorbed, i.e.,

the new thing is no longer isolated but is tied-in with other things.

For the reasons just given, then, the relation of things purposely discovered to one's real life is usually more vital than is the relation of things accidentally discovered. Some things are purposely discovered and also soon forgotten. College students have been known to discover the laws of falling bodies by experiment and forget them before examination day. The reason for this lies in the fact that these laws had little or no relation to their welfare—save as the latter depended on their success in examination. Their purpose was not a genuine out-growth of their vital interests in life, but was a purpose suggested by the instructor and touched the self only as do the particles in a rope of sand. In order that a discovered thing may become a permanent acquisition, it must be tied-in with ends or ideas about which one really cares.

Discovery most frequently refers to a mental synthesis regarding the relation of a cause and its effect. By observation, experiment, and reflection the child can discover that clouds are formed by the expansion of warm air laden with moisture, that the use of the cotton gin made slave labor profitable in the South, that England has good reasons for wishing to keep possession of Gibraltar, that parenthetical clauses should be indicated by some kind of symbolism, that the volume of a cone is equal to one-third of the volume of a cylinder having the same base and height, etc., etc. Just as the race has, by mental syntheses, built up much of its knowledge, so, too, the child may be so conditioned that he shall discover the relations for himself.

It is evident that there are many things which the child may learn either by conscious imitation or by discovery. It is evident, also, that, in general, the syntheses of discovery imply a greater degree of self-activity, of internally initiated mental activity, than do the syntheses of conscious imitation. Therefore, other conditions being equal, it is more genuinely develop-

ing for one to discover things for himself than to learn them by conscious imitation. The laboratory method is the method of discovery, while the usual study-recitation plan is the method of conscious imitation. Qualifying conditions as to the use of discovery as a schoolroom method are:

1. Many things can not be learned by this method at all.
2. There are so many things that might be discovered that it is impossible for any one person to discover more than a small fraction of them.
3. Many things which the child could discover by long and patient effort are not worth the energy they cost; that is, some things would better be learned imitatively and the time thus saved be spent in the discovery of simpler and more valuable things.

§ 23. INVENTION.

Invention is the self-initiated combination of previous elements of experience in new ways. The material thing we call an invention is simply an expression of the internal reality, and is the test which determines the validity of the invention. Imitation follows an external copy; invention has no copy, external or internal. Invention is an original synthesis of previously acquired elements of experience. The only original thing about an invention is the synthesis.

All the materials which go to make up the cotton gin existed prior to its invention by Eli Whitney. Whitney simply brought these materials into new functional relations with each other. He faced a condition—the slow extraction of cotton seeds by hand—and set about devising an arrangement of revolving teeth (substitutes for human hands) which would rapidly remove the seeds from the balls. In invention, a new way of performing a process is substituted for an old way; the self-binding harvester is a substitute for the reap-hook and the binding of grain by hand; the typewriter is a substitute for the process of writing by pen or pencil. If a certain end is to be reached; he who can see a way of his own to that end is an inventor.

It may be, however, that one does not know any process by which the end may be reached. Any one of the famous puzzles (the magic keys, the Chinese puzzle, the match puzzle, etc.) is, when one first examines it, an illustration of this lack of power to invent. In such a case, one forms a tentative theory of a process which may bring about the desired end, and then attempts to realize his theory. There may be more than one way of reaching the desired end and there is, therefore, as regards the process side of it, more than one invention possible. Each person who finds for himself a way to the end is an inventor. Invention thus seems to be, on the psychological side, a utilization of the elements of one's past experiences for the purpose of reaching an end by a process which was not known to him before.

Therefore, the fact that a thing or process has already been discovered or invented by another is no bar to one's discovering or inventing it.

§ 24. SELF-ACTIVITY.

It should now be clear that self-activity means a minimum of passivity and a maximum of activity of the self. All mental activity depends upon a primary stock of mental experiences. Efforts to teach a girl who had been deaf-blind from the age of ten months failed because she had no primary stock of mental experience to elaborate.¹ The elaboration of mental experience into higher integrations and syntheses is the essence of mental development. The child has already acquired a large stock of primary experiences when he enters school, and has already done much toward working this over into higher forms of mental experience. The function of the school is a twofold one, viz., to supply the child with those primary forms of experience which he has not had and which are necessary as a basis for his socialization; and to condition the child in such a way that he, through his own effort, elaborates his primary experiences into those forms

¹ Frank Hall, Aurora, Ill., formerly Supt. of Ill. School for the Blind, is authority for this statement.

which are essential to participation in the actual and ideal life of the race. If the child re-creates the content of his race inheritance through discovery and invention, independence and self-reliance in thinking as well as originality, inventiveness, and moral integrity inevitably result.

The mental activities already sketched are rendered socially serviceable and communicable by means of arbitrarily selected motor activities, or signs, or symbols. In a last analysis, oral language is nothing but a series of unmeaning sounds that are produced by physical movements. Written language is nothing but a coördinated series of marks made by motor activity. Mental reality comes to exist by and through self-activity. Symbols are associated with their correlative mental realities only by a process of repetition, of sheer association by contiguity, of imitation. The development of the child's mind is, therefore, a thing that has two aspects, viz., progressive mental syntheses, and an adequately expressive symbolism. The expressive symbolism is valuable only as it is truly expressive of mental syntheses. The first concern of all education, then, is the establishment of conditions that actually stimulate individuals to mental syntheses. To make the acquisition and control of symbolism, or even the acquisition of knowledge, the first concern of education is a fundamental error.

§ 25. AN EXAMINATION OF OTHER TERMS USED IN DESCRIBING THE METHOD OF EDUCATION.

If from these considerations we turn to an examination of other terms used in describing the method of education, we shall perhaps understand more clearly what has already been said on this subject and at the same time see the validity of the examined terms.

1. OBSERVATION.

Our word observation, which means *to look at*, is our equivalent for Pestalozzi's word *anschauung*. By this word Pestalozzi meant the mental activity which takes place in the presence

of an object, what has been called sense-intuition. This activity is, essentially, the mental grasping of the relations of the object in question, the discovery of its connectedness. This discovery of connectedness is dependent upon the previous integrations and organization of the mind. *Anschauung* is really mental synthesis, or apperception, and consequently Herbart's doctrine of the *Formal Steps* is really an elaboration or interpretation of Pestalozzi's theory of *anschauung*.

Observation is more than the mere staring at or listening to things. Not the object itself, even though it be necessary—not the historical sequence, even though it be as real as the schoolroom walls—but the actual discoverative, inventive, self-directed, apperceptive, or synthetic mental activity of the child is the essential thing. In the hands of teachers who did not understand this central truth, observation became "object lessons," and object lessons became mere imitative, parrot-like exercises in naming the properties, qualities, aspects, and relations of things. These exercises sometimes amused children, but they did not educate them.

2. EXPERIMENT.

Observation, even in the sense of *anschauung*, means that the attention is centered upon an object which is static; or, at best, upon an object which, though dynamic, is observed as it naturally changes. To remedy this defect, the object was made to pass through a series of changes, and the original object, the forces applied to it, and the object as modified by the forces became the unit upon which attention was centered. This control of the dynamic aspects of an object for the purpose of ascertaining the effects of controlled forces upon it, is experiment. Experiment thus involves a higher reach of mental synthesis than is involved in observation.

In the development of human knowledge, experiment has been an efficient method, and very naturally men turned to it as an aid in the process of education. When the study of

natural science entered the schools, experiment and the laboratory method came in with it, not wholly, but progressively. The value of experimentation was so thoroughly believed in that definite courses in experiments were arranged and laboratory manuals appeared in great abundance. These manuals stated the aim of the experiment and gave definite directions as to how to proceed from the first step to the last. Thousands of young people in secondary schools, academies, and colleges worked through these manuals, imitating the directions, getting the results, but not doing any genuine, constructive discovery or invention. The original value of the experiment, aside from its practical and economic aspects, lay in the mental development which the invention of the apparatus and the conditions demanded, and in the reflective syntheses implied in the discovery of the law or principle involved. All this was lost by the use of manuals of command and direction.

In defense of this plan it was argued that the individual must know what has been done before he can do any original work. If original work means that which no one else has ever done before, the claim is perfectly valid. It overlooks, however, the very palpable fact that one can do in a thoroughly original way what another has already done—that one can re-invent, re-discover, and thus have essentially the mental experience of the original inventor or discoverer. This re-invention is no longer invention if one simply follows directions; this re-discovery ceases to be discovery if one simply imitates. If the ideas of the preceding pages have any validity at all, the child should be so conditioned that he re-creates his race inheritance.

Experimentation under the manual ideal was also so rapid that the individual had no time to use the conclusion which he reached, as the basis for new apperceptive syntheses. Many pupils who have passed rapidly through experiments in heat and who have “discovered” the laws of falling bodies, can not or do not see that the draft in a chimney and the falling of an

apple to the ground are exemplifications of the same law, and can not explain the evaporation of water from a dish to which no heat has been artificially applied.

If properly used, however, experimentation offers valuable opportunities for genuine mental development, both in the inventiveness regarding apparatus and procedure needful, and in the discoveries and conclusions which result from reflection upon the successive steps and results. The research courses of our universities are powerful agencies in the development of independent, self-reliant, original thinkers just because the students in these courses invent and discover for themselves. The problems of university research work are not suited to the capacities and interests and needs of children, but the method of attacking such problems is "worthy of all acceptance" in the elementary school.

3. REFLECTION.

The term reflection is often used to indicate the effort of pupils to grasp the meaning of definitions and principles which they have learned or are learning. In so far as this process is anything more than the effort to interpret the words into equivalent meanings, it is the effort to re-form the indicated syntheses; and this process is, in a way, always imitative.

The term has another meaning, as in the phrase, *reflecting on one's experiences*. In this sense, reflection is the discovery of the deeper import of experience—its ethical meaning. In reflection, one's previous experiences are brought (or get) into such relations that new meanings are appreciated or discovered. Reflection is, therefore, the process by which the hidden meaning of experience becomes clear.

The term is also used as a synonym for original thinking, and in this sense it means either purposed discovery or invention.

In whatever sense the term is used, then, it means nothing additional, from the standpoint of actual thinking, to what has already been discussed in the preceding sections of this chapter.

4. DOING.

The term *doing* has long been in use in pedagogical literature and has in it the notion of making an idea to be real, and is, therefore, simply another term for will in the broadest possible sense of that term. What we have called involuntary experience, imitation, discovery, invention, self-activity—each has the characteristic of doing, and each implies motor activity. The element of motor activity gives one the feeling of emotional reality. It should also be conceded that conceptual and æsthetic reality are true *reals*, though they are lacking in the sensational element that is characteristic of doing.

Motor doing is likely to become habit; and habit implies a minimum of consciousness. And even this minimum is of the passive type. The interpretative control of conventionalized symbolism should become habitual, so that one may get at the meaning which related symbols express. The pupil should think as he attends to symbols, and if the interpretative control of symbols be not habitual, this thinking is impossible. The habit should result from repetition which springs from interest rather than from what are known as “formal drills.”

Much industrial doing also reaches the plane of habit. Skill is our name for this kind of habit. Skill is necessary for economic efficiency, but it always plays a subordinate rôle in any industry in which there is anything more than a mere mechanical activity. Carpenters in shingling a house, select shingles “to break the joints,” but not by any mere mechanical routine. Each man estimates at a glance the most suitable width of shingle, and chooses from those at his disposal the one best suited to the space that is to be filled. The opportunity for this selective activity is what renders carpentry a bearable occupation. In fact, the difference between skilled and unskilled labor is that one demands more ability to think as a person works than the other does. It is perhaps superfluous to say that one must have something in terms of which to think before he can think. Habit is, or ought to be, this

something in terms of which to think, rather than an unconscious somewhat, a stock of lumber piled away.

It has been stated that all doing implies a motor activity which gives one the sense of sensational reality. It is believed that all other forms of reality depend upon sensational reality for their possibility. And, hence, the basis for all valid higher thinking rests upon motor experience. The assumption of our schools has been that the child before coming to school and from day to day outside of school gets enough motor experience to give validity to the higher forms of his schoolroom thinking. This assumption is not valid for the majority of city children, and hence the growth of industrial education in our cities.

In so far, then, as doing gives an added emphasis to the place and value of motor experience, it is a serviceable term in educational theory. It should be evident, however, that part of the doing should be of each of the types already discussed, viz., involuntary, imitative, discoverative, inventive.

§ 26. THE FORMAL STEPS.

The terms already used in describing method do not outline a specific method of procedure applicable to all school subjects. The followers of Herbart, however, believe that there is such a uniformity in the movement of the mind in learning and of the subject matter which the mind can learn, that it is possible to outline a uniform method of procedure in teaching all subjects.

Briefly put, the argument is thus:—

(a) The mind interprets every new experience in terms of old experiences.

(b) The mind at first refers its activities to individual objects, events, or relationships.

(c) By comparing individual notions (images?), the mind abstracts the common (and therefore necessary) elements and synthesizes them into concepts, or principles, or laws.

(d) The mind thereafter interprets individual objects, events, and relationships in terms of existing concepts.

(e) All subject matter is made up of concepts and individual notions.

(f) The goal of instruction is the mastery and control of concepts.

(g) Therefore, in teaching, one should:—

1. Prepare the pupil's mind for the interpretation of the new by calling up the related old ideas.

2. Present the new in such a way that it may be readily apperceived.

3. Have pupils compare the new thus gained with similar portions of the old and thus discover points of resemblance.

4. Have pupils synthesize the elements of likeness thus discovered into a unity, the concept.

5. Have pupils apperceive individuals in terms of the concepts thus derived.

The "Five Formal Steps" thus outlined are called, respectively, Preparation, Presentation, Comparison, Generalization, and Application. These steps are held to constitute a uniform method of teaching procedure.

The most patent objection to the method of the formal steps is that only a very small portion of the course of study in elementary schools is of the conceptual type. The efforts of the Herbartians to show that all the subjects of the elementary school curriculum are made up of general notions, lacks in convincingness.¹ While it may be conceded that arithmetic is made up of concepts, it can not be conceded that the subject should be taught exclusively by the method of the formal steps. The older arithmetics were organized on this plan, i.e., the logical, conceptual arrangement. According to this old plan, the child was supposed to learn all about notation and numeration before he began addition; and all about addition, subtraction, and multiplication before he attempted the mysteries of partition and measurement. The most radical improvement in the teaching of arithmetic that schools have ever known, not-

¹ *Method of the Recitation*. Revised edition, pp. 5-12.

withstanding the possibilities of formalism in its use, is the spiral plan. But the spiral arrangement of material should be modified or almost wholly abandoned in the upper grammar grades.

In geography and history it is impossible to group the material into anything approaching concepts. We can secure, in these subjects, a series of images that are bound together by causal, temporal, spatial, and sometimes logical connection. In all the arts, such as writing, spelling, map-drawing, figure and sign making, reading, drawing, etc., there is the necessity of proceeding from the content or idea to its symbolism by sheer contiguity. It is also evident that it is impossible to organize the occupational and industrial activities of the school into the conceptual form.

The first objection to the formal steps may be stated thus:—It is impossible to organize the materials taught in the elementary school into the conceptual form demanded for successful treatment by the formal steps.

The method of the formal steps also implies that the chief element in mental development is the acquisition of conceptual knowledge; or rather, that if this kind of knowledge appears, desirable mental development also appears. While in no way minimizing the value and importance of conceptual knowledge, there is no psychological ground for maintaining that all valuable mental development must conform to this particular type. A mental experience has value not because it conforms to a given type or form of mental activity, but because through it there is an organization and integration of experiences with a consequent changed self and thought of self. The controllable series of mental syntheses, which is the essence of all knowledge, is only one phase of experience. The elaboration of experience into emotional attitudes, into ideals, into conduct is as important as is the elaboration of it into conceptual knowledge.

The theory of the formal steps also ignores the fact that all developing experience is spiral, or "circularly progressive." One never knows the geography of the Illinois River in any

reasonable fullness until he has a mass of post-school experiences. A college course in American History will reveal to one how imperfectly he knew even the causes that led up to the evacuation of Boston. It is impossible that elementary school instruction should have this completeness because the related experiences from which this completer meaning comes are not appreciated by the child. The theory of the formal steps implies a kind of completeness which is impossible, and hence, by ignoring the spiral character of developing experience, gives to teachers a mistaken notion of thoroughness.

The very patent fact that preparation, presentation, and comparison are widely used in teaching is no argument for the Formal Steps in their entirety, for the mental activities implied in these steps may take place without the activities implied in generalization and application.¹

§ 27. METHODS OF TEACHING AS CORRELATIVE WITH WAYS OF LEARNING.

The conclusion of this whole matter of method of teaching is that the method must conform itself to the ways of learning. There are many things which one can know about only by experiencing them, and with respect to them—provided they be worthy things—he is “entitled to his experience.” The influence of suffering on the development of genuine sympathy is clearly recognized. There is a touch, a tone, a coloring of mental attitude that can come only through involuntary experience, in both child and adult life. Other things can be learned only by conscious imitation, and with respect to these the teaching should be by furnishing copy and awakening desire. Many other things the child can discover for himself, and with respect to these the child should be so conditioned that he desires to find out for himself. Still other things can be invented by the child, and with respect to these he should be incited to inven-

¹ King's *The Psychology of Child Development*, pp. 238-241, has a different criticism of this Herbartian doctrine; also, Dewey's *Interest as Related to Will*, Second Sup. to Herbart Year Book, 1895, pp. 235-243.

tion. And finally, there are judgment, insight, sanity, not set down in any course of study, and which come only from reflection, or self-activity. To develop this self-activity, the child should be incited to effort by suggestion and question.

In all these ways of learning there is (immediately or mediately) a response to a stimulus. All may therefore be included under the term "reactive behavior." Arranged in a series to show the relatively increasing amount of the use of previous organization of the self in the several processes, they are:—

1. Involuntary experience.
2. Conscious imitation.
3. Discovery.
4. Invention.
5. Self-activity.

By these processes the child makes his race inheritance his own. By these processes he becomes, his self takes on a structure and a tendency. If inventiveness, resourcefulness, originality, initiative, and self-reliance are valuable traits, they can be brought into existence and trained to efficiency by skillful teaching. "Necessity is the mother of invention." If the child feels the need of knowledge, if he desires to know, he can invent much more effectively than if the necessity is external in the form of a system of marks, distinctions, a cross teacher, or a rod.

What is called method is nothing but the way in which the mind acts in developing. From the standpoint of the teacher, method is the organization of subject matter (or stimuli) in such a way as to produce the greatest possible educative activity in the mind of the child.

In the chapters immediately following, on *Discipline* and *The Recitation*, we shall deal more concretely with the theory of method here advanced, and show more in detail the character of the things which the child may best learn by the several ways of learning here sketched.

CHAPTER VI.

DISCIPLINE, INCLUDING SCHOOL ORGANIZATION AND MANAGEMENT.

The fundamental aim of all education is to secure right conduct as a revelation of right character, and, hence, the school should seek to go beyond *information* to what has been called *formation*. The Herbartian idea is that conduct, or character is determined by the "circle of thought"; that is, the circle of thought determines feelings, and feelings determine one's actions. Hence, it is possible to form character through instruction. In fact, instruction is the effort to influence, or form, or determine character by getting the child to think certain things in certain relations.

§ 28. INTRODUCTION TO THE PROBLEMS OF DISCIPLINE.

While discipline involves both government and control, it is more than either or both of them. There may be government and practically no discipline. In and through discipline the pupil's conduct is influenced, and ultimately his will is influenced through his conduct. The idea may be expressed in this way:—Instruction forms character by influencing the child's intellectual activities; discipline forms character by influencing the child's conduct. A disciple is known by his conduct; or, his conduct has made a disciple of him; he has been formed or disciplined by and through his conduct.

This view of discipline at once identifies it with teaching, and puts an equal value, so far as genuine formative influence is concerned, upon both instruction and discipline. It perhaps phrases the idea to say that the only concern of the teacher is to form the real self of the child in the right way. This is the

end, and all else is but means. Hence, discipline is a positive thing, not a negative one. It is to influence children to do quite as much as to influence them to refrain from doing certain things. And so discipline may be defined as the organization and coördination of all school activities in such a way as most effectively to accomplish the ends or purposes of the school.

This conception of discipline makes it a most difficult task, more difficult even than the act of teaching. If you can conceive of the difficulty of painting a sunset scene with colors that constantly change as you apply them, and change so erratically that you can not tell whether the crimson on your brush will turn to brown, blue, or white when dry, you can understand how difficult discipline really is. No teacher can predict with certainty what effect a given punishment will have upon a child. Children are not like billiard balls in their reactions and movements. The real self is dynamic, not static; and hence prediction of the effect of punishment is impossible.

This fact becomes more obvious when it is remembered that the child's sense of self is variable, varying in essential ways from childhood to maturity, varying less clearly from year to year, less clearly still from day to day, but varying all the time. The child's sense of selfhood determines his attitude toward any stimulus and also the value of that stimulus to him. And again, the problem of school discipline is rendered still more difficult by the fact that influences out of harmony with the ideal of the school, play upon the child when he is not in school, and the teacher is not only not responsible for these influences but also, in large measure, powerless to change them.

Extremely difficult though discipline be, one thing should be perfectly clear in the teacher's mind, viz., the aim of discipline. Many teachers regard discipline as a series of defensive acts, designed to keep children from tearing down the school-house or from infringing upon one another's rights. To such teachers the aim of discipline is "to keep order." But order is simply a means to an end. Conformity to the law of things is

desirable, but the spirit of conformity is far better, for the spirit of conformity means the right attitude toward things while conformity does not include this element. The orderly coming into the schoolroom is most valuable when it is done without pressure or penalties. The fundamental aim of discipline may then be framed as we phrase the aim of education, viz., *the development of the child into an efficient, ethical, social being.*

The fundamental aim of discipline being clearly apprehended, the next question is this, Is there a fundamental principle of method of discipline? The fundamental principle of method of discipline is, *one becomes an efficient, ethical, social, being only by being an efficient, social, being.* More briefly put, *one becomes by being.*

Psychologists show clearly that (1) an expression is required to clinch an impression; (2) the return wave of impressions from having acted furnishes the basis for our consciousness of self; (3) feeling, genetically, follows upon activity; (4) the will can realize only those movements whose elements have already been experienced.

The new born babe is characterless; it is a mass of possibilities. Random, reflex, sensory, impulsive, and instinctive movements give the first sense of self, a self with a consciousness like that of many animals newly born. Then unconscious imitation of what others do gives a set of feelings which identify the child with his fellows. The mere suggestive force of the environment produces consciousness but not self-consciousness. On the basis of the movements thus acquired, conscious imitation develops and with it self-consciousness. So strong does this idea of conforming to copy become that the individual comes to think there is a right external to himself. A parent, a teacher, some historical character or mythical personage, some book, or some organized view of the world may be the embodiment of this right. Or, through self-consciousness and reflection his own inner sense of values, his conscience, may be the thing to which life is made to conform. Or, conscious of the flux and

flow of things, one may seek to find the unchanging, the absolute, the eternal, which is God.

The essential thing in all this process is that through the activity of the individual he is formed. This activity is always both physical and mental. A goodness which is mental only, which never becomes an "overt act," is unthinkable. All the so-called virtues, kindness, forbearance, equivalence, mercy, temperance, etc., imply a motor activity. One can become a carpenter only by performing the carpenter-activity, a fine judge of horses only by judging horses, a musician only by playing some musical instrument, honest only by being honest, industrious only by being industrious, law-abiding only by being law-abiding, etc.; always and ever the law is that one becomes only by being.

The bad side of this is well known. Loafing on the streets has ruined many a boy; there is no drunkard who does not drink to excess, no glutton who does not eat too much, no thief who does not steal. Adults are anxious that children shall not taste the dregs of life because all this reprehensible activity is genuinely formative. One is what he has done; and what one shall become is largely determined by what one does now. The great fundamental principle is, *Reactive conduct forms character*.

But men have not always held the opinions just advanced. There are and have been various theories of the moral nature of the child, and these theories have a great influence upon the discipline administered by those who believe in them.

(a) The theory of total depravity.

There have been many people who, in the language of the *New England Primer*, believed that

"In Adam's fall
We sinned all."

The child, therefore, is born into the world depraved, and has tendencies toward the bad. The bad in the child is the work of the devil. Various methods of casting out devils were used, but the most successful method was the causing of physical pain.

The rod was the great devil dethroner. The greater pain of the child was interpreted as greater devil pertinacity. The more innocent forms of fun and play were regarded as works of the devil, and were robbed of their attractiveness by having intense pain associated with them. In the absence of suitable switches, the human hand could slap or cuff the child almost as effectively as a rod could be used. In schools where vast numbers of these incipient devils were collected, Yankee skill and ingenuity soon introduced the ferrule and the "rawhide" whip.

If one holds to this theory of total depravity, severity is the only method by which the natural badness of the child can be eradicated. Hence, wherever one finds those who believe in this theory, he finds those who are severe in their treatment of children. Some even go so far as to maintain that the fact that one desires to do a certain thing is sufficient reason for not doing it. The only good, according to them, is that pleasureless, colorless kind that comes from doing disagreeable things.

(b) The theory of innate goodness.

The inevitable revolt from the doctrine of total depravity meant its denial. By emphasis upon this denial the feelings of men swung round to the opposite view. Instead of total depravity we have innate goodness. Wordsworth says that

"Trailing clouds of glory do we come
From God who is our home."

And coming so direct from heaven, the child is good. He is the image of celestial goodness. Therefore the dicta: "Leave the child alone!" "If you attempt to interfere, you will spoil what God made to be good."

The defendants of this theory have always been mystics—men who thought they were in direct contact with the great palpitating heart of the universe. Through this contact they learned many things they could not explain. Their only proof was iteration. With all adherents of this doctrine the argument is:—"Let the child alone. You are already spoiled, but that is no reason for spoiling the child. Punishment is pain, and all

pain is evil. Leave the child alone and he will come out all right."

(c) Theory of evolutionary character.

With the rise of the scientific idea of evolution, there came from many quarters a re-interpretation of ethical theories.¹ If recapitulation be true (and its truth is always assumed), then each child in his unfolding *must* pass through all the stages of human history. All the appearances of evil are but passing stages of development, necessary as is the backward creeping of some infants in their first efforts. Therefore, to punish the child for something which he can not help is cruelty. The only thing to do is to "possess our souls with patience" until the higher stages appear.

The theory of recapitulation seems valid if stated as tendency. The tendency becomes an overt act, however, only on condition that the environment offer a favorable stimulation. Therefore, the evolutionary account of character is valid only when the present environment is similar in character to the environment of the ancestors. As the conditions of life change there is, of necessity, a change from the evolutionary order of unfolding.

Moreover, if the self takes up experience into itself and really becomes other than it was before by virtue of its reaction to a stimulation, the evolutionary tendencies are constantly being modified. The successive and integrated modifications thus brought about so greatly change the original tendencies that recapitulation is not an accurate description of a human being's mental growth.

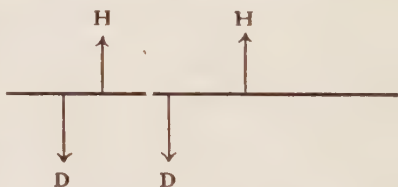
(d) The theory of experience and reflection.

Sympathetic observers of children and students of psychology are generally of the belief that children are neither good nor bad at birth; they are neutral because lacking in that experience without which good and bad are meaningless terms. Children

¹ Recapitulation is the theory that each individual in his development passes through all the stages of development through which his ancestors passed.

are, at birth, at the zero point of morality. There is, doubtless, a genuine hereditary element as racial instincts and also as special heredity. All this hereditary endowment, however, exists as so much of tendency or possibility. That which alone can change tendency or possibility into reality is environment, or stimuli of some kind. In this environment of the child there are both the good and the bad. Therefore, by his imitation of the environment, or by his responses to it, the child becomes both good and bad. Good and bad elements are found in each person, and the above explanation shows why this is so.

We can illustrate the theory here advanced by a diagram. The lines H H represent the "heights of holiness," while the lines D D represent the "depths of depravity." Whether



the child has tendencies in either direction, in both directions, or in none at all, it is clearly seen that he moves toward either holiness or depravity in consequence of his responses to stimuli that play upon him from his social environment. When through experience the child has formed a basis for it, reflection enters and the child begins to draw conclusions as to what is right, as to what is expedient, and as to what is bad.¹

This theory of experience and reflection explains the genesis of moral notions (they arise primarily through experience), their development (depending upon the "copy" of the environment), and their elaboration into an ethical code (brought about by reflection). This theory makes the formation of moral character as definite a possibility as is the organization of intelligence through instruction. The teacher can so control and order the experience of the child, so stimulate him to reflection that the right attitude toward life results.

The child at first unconsciously conforms to the spirit of

¹ Reflection is a form of experience just as truly as is going to a circus.

the social and institutional life about him—he yields himself to it. Soon, however, in dealing with his playthings, he learns that he can make his personal, private ends prevail, and hence he uses things (which are perhaps at times thought of by the child as persons) merely as means to ends. Adults use inanimate things in this way, and they also extend it to animals. These personal, private ends are so attractive to the child that he soon endeavors to use persons as he uses things—as mere means to ends.

The child also soon learns that certain social requirements are incompatible with his personal ends. He learns by experience—sometimes by invention and sometimes by imitation—that the penalties for non-conformity to social requirements may be evaded by a secret realization of his desires. He therefore gets a motive for cunning semblance of innocence. Pre-proclaimed penalties, therefore, foster secret sins, both in the home and in the school.

Again, the child is not without plenty of social copy to lead him astray in this matter. He learns something of crime and of the escape of criminals; he learns some of the conventional lies of society which are defended on grounds of expediency too complex for the child to comprehend; and so he gradually comes to feel that if the wrong thing be not known to others, the wrongdoer is just so much ahead. When he first gets this feeling, he is too young and immature to understand how these secret sins weave themselves into the woof and warp of his life; and when he is mature enough to comprehend this great truth, he is usually a slave to the habits he has formed in secret.

To summarize this introduction to the problems of discipline:

- (1) Discipline is a positive, formative thing.
- (2) The aim of discipline is the formation of right, or moral character.
- (3) Reactive conduct forms character; we become by being.

(4) By his responses to the suggestions of his environment, the child becomes both good and bad.

(5) The teacher's duty is so to control the child's environment that by his responses to it he becomes social and ethical.

(6) This task is rendered extremely difficult because of three things:—

(a) No one can predict with certainty how a child will respond to a given stimulus.

(b) Influences which the teacher can not control constantly play upon the child.

(c) The child's sense of selfhood is a perpetual variable.

§ 29. STAGES OF SELFHOOD IN DEVELOPING CHILDREN.

There is continuity in the development of the child; a more or less of this or that phase of activity, but no abrupt breaks. Therefore, the analysis and naming of stages of selfhood is not to be understood as an attempt to set off certain time-periods in the life of children during which alone certain things are true of them. The stages hereafter to be analyzed are overlapping and also variable in intensity and duration in different children. The only purpose in this analysis is to reveal a little more clearly the reality of the child's expanding life so that, in consequence of understanding it better, teachers may more effectively deal with pupils.

1. The child is born into the world with a body consisting of related bones, muscles, nerves, nerve-centers, and a mechanism by which these elements may grow and develop connectedly. The connections between these elements are partially established at birth. The nerve cells may, without any apparent external stimulus at all, send discharges outward so that movement of some sort or other results. The movements are (or seem to be) aimless, purposeless, variable. The first movements of an infant's arms and legs appear to be of this character, and are therefore called *spontaneous* movements. We may therefore describe spontaneous movements as those which result from an

accidental, internal discharge of nervous energy which escapes now in one way and now in another. Such movements also result from an excessive discharge of nervous energy as may be seen in almost any person who is under great mental strain. Throwing a looking glass from a window and carrying a pillow downstairs from a burning building is a concrete case of spontaneous movement. Such movements are, of course, performed without any definite, antecedent consciousness, although consciousness of the movement may follow.

There is another class of movements closely associated with spontaneous movements. The nervous mechanism is so adjusted and organized that if a stimulus of sufficient intensity affect a nerve-ending, the stimulus travels inward and is reflected back from the nerve cell so that movement results. And the movement results before there is any consciousness of the stimulus. All such movements are called *reflex* for the reason just given. The contracting of the skin of a snake that has been dead some hours sends stimuli inward and responses occur till the energy of the central cells is exhausted; and hence the belief that a snake, no matter when killed, does not die till sundown, has arisen. The flesh of a turtle which has been dead twenty-four hours will twitch and quiver when put in warm water or sprinkled with salt. The "flopping" of a beheaded chicken is largely of the reflex type, for each time the chicken falls upon the ground the stimulus for the next movement is given. If one's finger be placed in the open palm of a sleeping infant, the latter's fingers will close because of the mechanism of reflex action. Suppose that something comes into contact with the fingers or arms of a young child, by reflex action the arm will be bent into its pre-natal position. If the fingers come into contact with the lips, by another reflex the action of sucking is initiated. The complex and delicate nervous mechanism of the child insures that he will have much experience of the reflex type.

The child has sense organs at birth, and though they are

far from perfect, they are excited by the world of stimuli that play upon him. This stimulation is inevitably followed by movement. These movements from the stimulation of a sense organ, however, are widely variable, and hence, while of the type of reflex movements, are distinguished from them by their variable character; one can predict what reflex movement will follow a given stimulus, but not what will follow the stimulation of a sense organ. The child who has not learned to inhibit incipient movements is at the beck and call of every stimulus that plays upon him; and this accounts for the apparently large amount of non-serviceable bodily movement in children. The movement which follows the stimulation of a sense organ is called sensory movement. And it would seem that the external world is an inference from the reactions to stimuli of this type.

Moreover, some psychologists believe that young children perform complex movements made up of a series of such simple movements as we have been describing, by means of which desirable and advantageous ends are secured. The child has never experienced the result, and so he can not be said to desire it, but he acts as if he knew what the result would be. All such acts are called *instinctive* movements. Commonly cited examples are sucking, curiosity, stretching and yawning, etc. There is, however, no agreement among psychologists regarding this matter of instinctive movement, but if there be such a thing at all it must be capable of description by the phrase, *pre-natal habit*, or *functional correlative of structure*. Some say that children have more instincts than the young of any other animal, and others that children have few, if any, instincts but many impulses. Whatever subsequent investigation may prove to be the origin of such movements, it is evident that very early in the child's life he is able to perform complex movements.

The value, however, lies not in these separate early movements, but in the consciousness of movement which they awaken. These spontaneous, reflex, sensory, and complex movements

are the things that awaken the child's consciousness, and that equip him with a stock of motor images. Besides a mere stock of motor images, the child gets out of these early movements a stock of coördinations of sense impressions and equivalent motor responses; he learns what he is to do when certain stimuli are present; he gets a glimpse of significance. Also, such motor responses are associated with either pleasure or pain, and hence the child has a motive to get into contact with the stimulus again or else to keep away from such contact.

It should be noted, also, that the child's instincts (or impulses towards certain kinds of activity) are transitory,¹ and that they give rise to interests. From this it follows that the desirable instincts should be conserved by giving them exercise and the undesirable ones turned to good by grafting. The need of variety in the child's life is also evident, for variety alone can succeed in calling out all the desirable instincts in the child.

2. Following closely upon the first stage of the child's development is the stage of *ideo-motor* action. The term simply means that the presence of an idea is followed by a movement. The phrase, *unconscious imitation*, is also used to describe this reality of one's mental life. The clearest illustrations are of a baby laughing when others laugh (the babe being too young to imitate consciously); a child's making the same sound over and over again for a considerable time; putting out one's foot to prevent a fall when one sees another person about to fall; mimicry movements in following a speaker or the plays in a game of football. In a young child, the performance of an act is immediately a suggestion to perform it again, and so the "circular process" is set up. This circular process seems to be nature's way of developing skill in the young. The presence of pleasure accompanying the process is assumed, for, if pain resulted, the act would be inhibited. The whole matter may be summed up by saying that certain of the child's move-

¹James' *Briefer Course*, p. 402.

ments, because of their pleasurable tone, are selected unconsciously and repeated frequently enough to result in skill.

3. This second stage soon gives way to a more important one, viz., a stage in which ends consciously set up are realized in a variety of ways. One evidence of this stage is found in the child's games and plays—the child sets up pleasurable ends in little nursery games, say with blocks, and performs a series of movements for the sake of securing the ends. Another evidence is found in the child's seeking the approbation of his elders. This approbation is pleasurable to him and every observer of children knows the resourcefulness and persistence of children in their efforts to secure the approbation of those they love. Along with this goes conscious imitation, persistent efforts to realize an end which exists as an objective "copy." A child just learning to talk illustrates conscious imitation perfectly. Some new word is needed by the child, and he sets about trying to do as others do. Fortunately, such effort is usually pleasurable to the child and so he gains a considerable control of symbolism without any consciousness of pain. The significance of imitation, however, lies not in the fact of imitation itself; but rather in the fact that through the imitation of what others do he comes to a new thought, or sense of self. Consciousness of self seems to grow out of conscious imitation.

4. The child is inevitably praised for his successful imitations. This, of course, exaggerates his sense of his own importance. Hence, he desires to gain distinction both with his peers and with his elders. Who has not seen a child "showing off" for this purpose? The child enjoys showing his power, and may even become "pert," "saucy," or "smart." Some children even tell lies to make themselves seem more important and powerful than they are. The child's sense of self broadens to include his possessions and even the family achievements. A small boy said, "Me and my sister have already shot off fifty cents' worth of firecrackers." To this another responded, "'That's nothin'; Bess and me has shot off two dollars and forty

cents' worth apiece." It is probable that both boys were lying because of the love of distinction. In this stage conscious imitation is still strong, but it seeks the copy that brings distinction.

The one redeeming feature of all this egoistic stage of the child's development is that he is willing to seek distinction through plays and games that are social in character. The child usually likes to be "it" when distinction attaches to the position. Still, to gain distinction through games requires a subordination of one's self to the rules of the game. This element of social coöperation is the saving element of the child's egoism. The "spoiled child" is usually the one who has no sense of self as related to others. When children enter school one can tell whether they have already learned this lesson of subordination of self.

It should be noted that children differ very much in their attitude toward others in this stage of their development. There are children who seem content to imitate, to be passive; and others who seek to improvise, to invent. The passive ones are of the sensory type, and the inventive ones of the motor type.¹ The motor children are more self-assertive and, consequently, become the leaders. Incipient leadership seems to be born at this time.

5. Because of rapid physical growth, or because of some painful experience, the child may not be eager to make new ventures. He may become self-satisfied. With an environment sufficiently stimulating and suggestive, this stage may not appear at all, or last but a short time. Repressing children who have a tendency to be reticent does them a lasting injury. Country children often fall into this self-satisfied stage. Indeed, the lack of variety in their environment is a sufficient explanation of their diffidence and lack of initiative.

6. With growing motor ability, an increased knowledge of what is regarded by others as worth while, and a feeling that

¹ Baldwin's *Story of the Mind*, pp. 166, ff., has a full treatment of these types.

one must be responsible for his own career, comes the desire to achieve something for one's self, to carve out a destiny, to become independent. The ordinary routine of schoolroom tasks and the simple home duties become distasteful because the child does not appreciate their utility. His interests lie with and in those things that bring results. The approbation of peers, teachers, and parents is valued less highly by the child. There is likely to be inward rebellion accompanied either by outspoken rebellion or else a listless, lifeless, wooden conformity to requirements. This opposition between interests and requirements usually produces a certain shyness, reserve, even secrecy and fear. What we call "bent" usually appears at this time, and it is only strengthened by the necessity of keeping it to one's self.

Because of the child's already developed motor control, because of the rapid growth of his body which renders higher forms of control possible, and because of his strong desire to produce the useful, the usual school and home duties should be supplemented by construction work, domestic science, manual training, gardening, and the domestication of animals. If the child has nothing in his life which answers to his needs, he will become secretive and, possibly, deceitful.

7. Then there comes a new sense of self as related to others—the stage of loyalty to the "gang," or "set," or school. This loyalty grows up on the basis of certain desirable ends clearly conceived and a real or possible opposition. Without being on the team which represents his school at all, the child yells or "roots" without limit. Things which are mean and despicable in the opponents are all right for the men of his team. There is a widening and deepening of the sense of self, and the feeling of "social solidarity" is born. The child's motto, "Ours for success," is not very high ethically, but it is as high as the child is fair. This social feeling, however, grows into institutional spirit, civic interest, and patriotism.

This stage rests upon a clearly apprehended unity of inter-

ests, and it is a mistake to attempt to foist upon the child any adult interests as bases of social organization. Children have their own peculiar and particular interests and resent any dominating intrusion by adults.

8. With the rapid physical growth of the period of adolescence comes a certain indescribable physical lassitude and an apparent indifference to many things that formerly aroused interest. With this physical growth and functional change, strange impulses come to the child. He becomes bashful, not simply because of his physical awkwardness, but largely because he is not sure how others would regard this strange, new, impulsive self within. Consequently, there is a loss of confidence in others as well as in himself. This drifting continues for a year or two, becoming habitual with some, and giving place to a certain peevishness, narrowness, or fickleness in others. In most children some feeling for those of the opposite sex is awakened, and around this feeling cluster most of their social activities. Love-games have lasted so many centuries because they afford an opportunity both to express and to conceal one's real feelings.¹

It is quite impossible to determine in advance what a child will be at the end of this period of adolescence. Some boys who have always been gentlemanly up to this time become "toughs," and some girls who have been models of propriety become "rowdies." The reverse is also true. This period is perhaps the most critical, in its final outcome, of all the stages here imperfectly sketched. Usually by the time a boy or girl is seventeen or eighteen years old, his or her generic attitude toward life is pretty well formed and revealed in his or her conduct and accepted ideals; but what attitude one has at twelve years of age is no such guide to the future.

This imperfect sketch of the stages of development of the sense of selfhood in children shows that the same sort of school organization and of studies will not be equally effective with

¹ *Pedagogical Seminary*, Vol. V. p. 61, ff. has a study of *Adolescence*.

pupils of all ages. In fact, not what is set up in the way of a course of study, not what ideals of conduct are held before the child, but *how the child responds to the stimulus* is the thing that determines the educative efficiency of our efforts. With this knowledge of the child who is to become civilized and socialized by^r discipline clearly in mind, the matter of the organization and management of the school may be taken up.

§ 30. ORGANIZATION AND MANAGEMENT.

The meaning of these two terms, *organization* and *management*, needs to become clear. Without attempting any derivative meaning, and attempting only a descriptive definition, it may be said:

(1) To organize a school is so to relate and coördinate the various elements necessary to make up a school that they work together harmoniously, effectively.

(2) To manage a school is to make the organization real.

Organization and management are in reality but one, and will be so considered, for planning without execution is but dreaming, and executing without planning is foolhardiness.

The various things necessary to make up a school are pupils, parents, teachers, books and apparatus, heat, light, fresh air, a schedule of study and of recitation. The problem of organization is so to coördinate these various elements that by and through the coördination effected the end of education may be progressively realized.

I. The mechanical phases of school organization.

There are certain mechanical phases of organization that demand attention because of their relation to the mental activity of the child.

(a) The pupils should be so seated that the work of separate classes shall interfere as little as possible. And the separate seats should be of such a character that no unnecessary fatigue, or strain, or curves of the spine may interfere with the activity of the child's attention. It is possible, of course, to have a good

school with rude slab benches, but the less attention a child is forced to pay to splinters the more he may give to letters.

(b) The lighting of the schoolroom is of importance only as the proper intensity and direction of the light is an aid to easy visual discrimination. The least strain in visual discrimination means greatest power of attention to the thought relations involved.

(c) So, too, in heating a schoolroom; the aim is to maintain that temperature which is neutral to the child, so that he does not notice the temperature at all. This of itself is an easy matter, but it becomes difficult because of its connection with ventilation.

(d) Fresh air is necessary to the proper activity and, consequently, feeling of the body. The impurities in the exhaled breath are the things that dull and diminish the activity of the body and the brain. To get plenty of fresh air into a room is easy enough; but to get it of the proper temperature and without a draft is difficult. Ventilation is a separate problem for each school building and for each schoolroom.

(e) The program must have reference both to study and to recitation periods. The great desideratum in making a program is to arrange it so that the work to be done may be done with least effort and least loss of time. Since fatigue is a fact that cannot be escaped, the laws relating to it are important in their bearing upon program making. First, fatigue is contagious. If one expresses the feeling of fatigue, this expression is a strong suggestion of the feeling to the one who sees it. Second, any painful emotion or activity readily produces fatigue while any pleasurable activity or emotion produces a sense of power, or buoyancy. The reason for this is that pain is, in general, an indication that something is interfering with the advancement of the physical or mental life, and pleasure is the concomitant of that which makes for the advancement of the physical or mental life. Third, the loss of intellectual power due to fatigue follows a certain order, viz., abstract reasoning, imagination, memory, perception, sensation. Hence, those studies which

deal with perception may be carried on when others dealing with abstract or conceptual relations could not be done with profit.

Besides the laws of fatigue, one must consider, in making a program, the age and ability of the pupils, the character of the subjects, and the work that must be accomplished in a given time.

The purpose in setting forth these mechanical phases is not to make a manual, not to set forth the best make of school desk, or the best plan for admitting light to schoolrooms, or the best method of heating and ventilating a building. Rather, the purpose is to set forth the ideal with respect to these mechanical things, to give the reason for attention to them, to show how they are factors in the schoolroom education of the child, and, especially, to indicate how they may become factors in the problem of school discipline.

II. The spiritual phases of school organization.

By the spiritual phases of school organization is meant those things which appeal directly to the child's mind, which are direct suggestions to mental activity. Chief among these spiritual things are the course of study, the personal influence of the teacher, coöperation in various forms, and the decoration of the schoolroom and yard.

A. The course of study.

1. The course of study stands as the chief among all those forces which are direct suggestions to the mental activity of children. It stands as the one central means by which the aim of education is realized by and through the agency of the school. A course of study indicates what ideas the community believes its youth should acquire. Therefore, the course of study has changed from an exclusive study of the catechism to the complex thing it is to-day. The great danger is that the course of study will become habitual, static, instead of being dynamic, adaptive. Social habit may lead to arrested development just as truly as individual habit may; but be it a blind clinging to the past or abreast of modern needs, the course of study still unmis-

takably indicates what the community holds best for its youth to know.

2. If, now, the course of study be analyzed the subjects involved in it will appear. First of all, there are those studies which deal with the means by which men communicate with each other, such as oral language and written language. These in turn imply reading, writing, spelling, drawing, and pronunciation. Second, those studies which have to do with social adjustments, such as industry in its various forms, history, geography, civics, literature. Geography shows how men adjust themselves to natural forces and to each other; civics, how the governmental phases of social or group adjustment have been and are maintained; history, how men have adjusted themselves to natural forces, to exchange, to friendly and hostile groups, and to ideals; literature, how men might have adjusted themselves to various things; industry, how men adapt themselves to natural forces in production, to each other's needs in transportation, and to the demands of equivalence in exchange. Third, there are studies that deal with the adjustments of natural things to each other and with our human interpretations of such adjustments—what we call nature study and science.

3. It is easy, therefore, to trace out the reasons for teaching each subject in terms of its socializing influence. Nature study equips the child with a set of interpretations regarding natural phenomena, interpretations that assist him in more clearly comprehending the utility and beauty of nature, that render his life fuller and richer. Punctuation socializes the child in two ways, viz., by giving him a ready power of interpreting the thought relations of the sentences he reads, and by equipping him with control of a conventionalized symbolism by which he can more clearly and effectively communicate his thoughts to others in writing. Geography socializes the child by teaching him how others adapt themselves to natural conditions to make a living, and to each other so that they live. The higher reaches of geography (physical geography and geology) constitute a natural science

for they deal with natural things and forces which may be treated without reference to human interests. Such geography, however, has little place in the grades of the elementary school.

4. It should now be evident that every group change of industry, of social relationship, or of ideal demands some change in the course of study. Every change, in fact, may be explained as due to social pressure. Those changes which are transient, which do not answer to a fundamental social need are the "fads" of the school. These fads may be given a place by the influence of teachers whose judgment has been warped by long brooding or by undue readiness to copy the work of others, or by the influence of some social organization whose purposes are good but whose "vision of the whole" has been blurred by unbalanced enthusiasm. Ultimately, and without fail, the course of study conforms itself to the social ideal; and since this ideal changes, the course of study must also change. These changes in social ideal are gradual because the conservative element makes them so, and the corresponding school changes should be gradual also.

5. But granting that the content of the course of study is and must be a reflection of the social consciousness, the arrangement of it—its order—is usually left to the school. This order is not indifferent to the child. It should have an element of progressive continuity about it so that what the child has already learned may be the apperceptive basis for the learning of the new. Not separate subjects, but phases of one subject is the ideal arrangement of a course of study. This means that the course of study shall be broken up into a series of related unities so that the order in which knowledge is learned may be a suggestion to its unification or systematization.

This order, moreover, should conform to interest. Interest is simply the desire to know, the feeling of finding in an object something which satisfies one, a something that has worth for one, a clearly felt value. One can not rely in school instruction wholly upon the extra-schoolroom interests of the child. His interests in games, in natural things, and in social situations are

not sufficient to carry him through the studies of the school. But it is possible to awaken interests, to suggest things to the child, to awaken needs in him. In short, it should be the teacher's constant effort to connect what he teaches with the already established interests of the child, and also to lead the child to connect what he learns with the manifold present and prospective extra-schoolroom affairs. The possibility of doing the things just mentioned rests upon the law of the spreading of interests, which is, "Uninteresting things become interesting by being brought into real relations with things already interesting." Always and everywhere, the uninteresting becomes interesting by being brought into vital relations with existing interests. The demands of this very important truth upon the order of the course of study are obvious enough.

6. But there is a more fundamental consideration involved in this matter of the administration of the course of study. How should the course of study be regarded, as so much knowledge to be learned or as so much opportunity for constructive thinking? What is the end, information or formation? The answers to these questions lay bare the basal fact of the course of study. The course of study exists not as a mold by means of which products of one common pattern may be turned out with regularity and applause. Rather, it exists as so much of opportunity for development for each child. Each child, by solving the problems presented by the course of study, by learning the facts, by reflecting upon the meanings of the facts transforms himself from the child into the man. The course of study should, therefore, be regarded as so much of opportunity for constructive thinking by means of which each child shall become genuinely socialized.

B. The personal influence of the teacher.

The course of study is vitalized and becomes this opportunity for socialization only through the mediation of the teacher. If the clay be ever so good and the potter a poor workman, the product will be poor. Better a good workman and poor clay

than the reverse. And so, after all is said about the significance and ideal purposes of the course of study, the teacher is the medium by which the course reaches the child's mind.

1. It should be noted, in the first place, that, in all elementary education especially, the unconscious influence of the teacher is very great. Since this is true, the teacher should be fundamentally true and noble. Being a saint in the schoolroom and a sinner outside is an impossibility. Skill in questioning and suggestion avail much, but they are of the highest efficiency only when they are added to a character that is worthy. The laws which demand that a teacher be a person of good moral character are an evidence of a certain level of social consciousness and of a social appreciation of the claim here urged.

2. The direct, conscious influence of the teacher is also lasting. Every adult can look back over his school days to some event in which the conscious personal influence of some teacher became an incentive to good or bad conduct. The peculiar thing about this is that the teacher cannot tell what action or word of his will become this transforming agency in the pupil's life. Hence, the necessity that all the conscious activities of the teacher be of a kind that makes for character.

3. It is desirable, therefore, that the teacher have self-control developed to a remarkable degree. Schoolroom situations frequently have such a degree of intensity as to excite strong emotions. The teacher who yields to these sudden tides of feeling not only sets objectionable copy for the pupils, but also lowers himself in their estimation. Aside from the reasons just given, every teacher needs self-control for the sake of saving his own power and vitality. And, finally, leaving all low utilities out of account, self-control is worth while just for its reflex influence on one's character.

4. This self-control, however, does not mean either cynicism or stoicism; and it is not at all incompatible with sympathy. A minister once said that the devil had most of the world's good music in his service. It ought not to be so, nor should it be true

that we have sympathy only for those in pain or misfortune. One should *feel with* (sympathize) those who have pleasures as well as with those in pain. To sympathize is to enter freely into the related mental activity series of another. To do this, one does not have to become either violent or insane. A look, a pressure of the hand, a word—any one of these will suffice. And the teacher who can thus unreservedly and freely enter into the lives of his pupils grapples them to him “with hooks of steel.” Without sympathy on the part of the teacher, a schoolroom is a sort of prison house.

5. The teacher should also have insight, as this is opposed to book knowledge. Insight means an appreciation of the significance of particular things as related to the totality of things—it means sense. The teacher who has his pupils read every lesson in the book just because it is there, or solve all the problems in a list simply to keep the pupils busy, or so that he may say that his pupils solved every problem in the book, lacks insight. In view of what has been said above regarding the course of study, we may say that insight is that which enables a teacher so to correlate the daily work and so to interest pupils in it that the maximum educative effect for each child results. Insight interprets the formal requirements of the course of study in terms of educative possibility, and realizes that though “the letter killeth, the spirit giveth life.” Insight also means that the teacher understands the needs and inclinations of children.

6. Along with these fine qualities and attainments should go a plain and unheralded honesty. Honesty is demanded not only in the realm of social contact and in reports concerning natural things, but also in the realm of the intellectual. Many times children ask questions which the teacher is unable to answer. A fear of falling in the estimation of the child has led many a teacher into dishonesty. The confession of ignorance is simple, intellectual honesty. Of course, the child may lose his respect for a teacher who does not know some simple little fact which the child has known for years. This is regrettable, in-

deed; but the effect of intellectual dishonesty is even worse for both the teacher and the child. One's sins have a way of finding one out; they grow to such proportions as to topple over. And hence, plain, unheralded honesty is necessary to the best personal influence of the teacher.

7. The personal qualities already set forth also imply the virtues of consistency and evenness of temper. Consistency means the making of life to be a whole that is without contradictions. Evenness of temper means that one so controls himself that the passing, shifting impulses are inhibited. If there be in the teacher the qualities already enumerated, there will also be the element of justice, not the justice of mere rule, not that which is constrained or forced by some previously uttered standard, but the justice that seeks the real *reformation* of the offender.

C. Coöperation in various forms.

Having seen the function of the course of study and of the personal influence of the teacher in the formation or development of the child, the influence of the various forms of coöperation upon this development should be considered. If the fundamental principle of discipline be correct, as already stated, one can become coöperative only by being coöperative.

1. The activity of coöperation arises in the child's games and plays. Leadership arises from such coöperation, and also bullying and dominance. Nevertheless, the games and plays of children of elementary school age are perhaps the most important and distinctive elements of their training in coöperation. Therefore, the games pupils play both in and out of school are vital factors in determining both their present and future social attitudes. The supervision of games is imperative. This supervision, however, should be of the sympathetic—not the dictatorial—sort. Whenever possible, the teacher's participation in the school games is desirable, both because of the knowledge he gets of the motives to which the pupils respond, and because of the

influence the teacher's participation has upon the pupils' ideals of play.

2. Over and beyond this seemingly natural coöperation of pupils in plays and games, there is a wide field of possible coöperation which the teacher can suggest. Blackboards, erasers, floors, desks—all need to be kept clean and orderly. If this can be brought about by coöperative effort, the growth in the spirit of coöperation is added to the utility of habits of cleanliness and orderliness. Let one group look after the erasers for a week; another group, the desks, etc. But all these things should be done with the idea of keeping the school orderly and clean, and not with the idea of fault-finding and carping criticism.

3. Closely associated with these activities are those in which the whole school participates, such as marching, drills, calisthenic exercises, etc. In these activities of the whole school, it is much better if they are performed from a sense of pride in and for the school than if they are performed because they are commanded.

4. Then, too, if pupils can be encouraged to bring books, maps, pictures, relics, specimens, etc., from their homes for temporary school use, there arises a feeling of genuine coöperation. Many teachers are blind to these opportunities for building up both a school spirit and a community spirit favorable to the school. A school can be too completely equipped, for the things that come without effort are often lacking in power to arouse interest and to hold the attention.

Underlying all that has been said in this section on school coöperation is the sociological theory that consciousness of others and regard for others are possible only through participation. This theory may be again illustrated by the consideration of another topic.

D. Decoration of the schoolroom and school grounds.

No one can deny the value of appreciation and love of art. The recent revival of the study of art has had a beneficent influence upon education, for our schools were placing too great stress

upon the development of the intellectual activities of the mind to the neglect of the emotions. Since most of the teachers then teaching were untrained in art, the subject came into our schools in a formal way. The contemplation of works of art (no, of cheap reproductions of great art) became the prevailing method in our elementary schools. The drawing of geometrical figures from book copy failed to develop a genuine appreciation of art or to prepare the child for anything else. No one would belittle the unconscious influence of art upon children, but we should rise above this in our instruction.

People used to build parlors and furnish them with upholstered furniture, lace curtains, and meaningless pictures in gilt frames. This custom is happily passing away, but it had and has its counterpart in the decoration of many schoolrooms. The idea was that all the selection of pictures and actual decoration of the schoolroom should be done once and for the whole year by the teacher; and that pupils, by gazing, would have their "art impulse" sufficiently developed.

1. The decoration of a schoolroom should be a dynamic, not a static thing. The ideal is not to decorate a schoolroom as a home would be decorated, for the purpose is very different. In one case the decoration is for the gratification of established ideals of the beautiful; in the other, the formation of such ideals. The static arrangement of things may satisfy, but it cannot produce the æsthetic ideal. Seasonal changes demand attention in the decoration of schoolrooms, and so do the special days and celebrations observed by the school. To make portraits of national heroes or pictures of historic scenes a constant in schoolroom decoration is to make them unnoticed.

2. Whatever the material used for decoration may be, a little reflection will make it clear that pupils should participate in the arrangement of it. Suppose that a teacher, with a considerable effort, has a room already decorated when school opens, and that the children feel that it is beautiful. Will this feeling last, or will it soon become unconscious? Suppose, on the other

hand, that the walls are bare on the opening day, and that the school takes an inventory of the pictures, selects the best place for each, and assists in the grouping and spacing of the decorations. Grant, also, that the arrangement in the second case is less in accord with the æsthetic judgment of experts. Which plan will give the most genuine art education?

The answer is to be found in the following truths:

Passive impressions *decrease* in vividness with repetition.

Active impressions *increase* in vividness with repetition.

These two principles have a wider application in education than is here given them, but their bearing on the problem of schoolroom decoration is obvious.

Another principle of significance in this connection is, "That which produces an appreciative or significant response is more educative than that which produces a formal response." The validity of this principle is evident when we consider how insignificant most pictures of the Madonna type really are to children. The Romanticism which produced the Madonna in art is foreign to the child in the lower grades.¹

3. Including suitability and harmony in the art feeling, it is evident that the care of the yard and buildings by the children is a positive element in their training. It is well if the trees are not all planted, if the flowers are not all furnished from a greenhouse. It is well to leave something for the children to do. The genuine appreciation of the beauty of flowers and trees cannot exist independent of some motor activity in connection with them. An interest in elms springing from planting one at school, may spread to include many other trees, but one cannot say that this interest would have arisen without some motor experience. And, too, since this is largely a matter of ideals, it should be evident that some real basis for the ideal must exist.

4. Much of what has been said applies to school gardens and flowers. The motor basis of genuine interest in these things is too evident, in light of what has been said, to need

¹ De Garmo, in N. E. A. *Proceedings*, 1901, p. 549 ff.

further argument. The school garden is not wholly for æsthetic ends—it should develop practical interests as well. Now, if this be the object, there should be the usual varieties of garden vegetables and some of the newer ones, also. A garden that has new varieties of vegetables in it will attract considerable attention because of the novelty. The school garden should not run to the quaint and the curious, but it is quite possible that interest in Brussel's sprouts may awaken interest in some commoner things by the law of spreading interests or by the comparisons the child may be led to make.

Further, the things most desirable for a school garden are those that grow fast enough to attract attention. Some change in the object is necessary to interest, and the present allotment of school time in the year is a further reason for the selection of rapidly growing plants.

5. Many teachers overlook the fact that flowers, grains, leaves, etc., may be used to good advantage in decoration. The feeling against them is due to the fact that they have frequently been kept so long that they have become "mussy." This is due to a certain laziness which leaves a thing where it has once been placed till its removal becomes an imperative necessity. Co-operative work should secure and arrange such material, and see to its removal and renewal.

6. The work of the pupils is often used for exhibitive purposes, and may occasionally be used for decorative purposes. Such work can never replace works of art, but it can be used as a basis for developing a sense of harmony, suitability, and balance.

In this whole section on the spiritual phases of school organization, an effort has been made to show that the course of study, the personal influence of the teacher, and the decoration of the schoolroom and school yard are a unity in being that which directly stimulates the mental activity of children; and, further, in so far as children actively enter into these various things, they are thereby directly disciplined in a right way.

CHAPTER VII.

DISCIPLINE, INCLUDING SCHOOL ORGANIZATION AND MANAGEMENT (CONCLUDED).

The place and value of the mechanical aspects of school organization and management, and the relation of the spiritual influences of the school to the child's growth have been examined in detail. The broader aspects of these things are now to be considered.

III. The social relationships involved.

Since the school is both an expression of the social consciousness and a thing that reacts upon social consciousness, there are two kinds of social relationships involved in a school, viz., those that have reached the plane of social habit, or law, and those that have not done so, and perhaps never will become matters of definite social formulation. The legal limitations vary from state to state, and with these the teacher should become familiar. A few general remarks, however, upon the spirit of these legal requirements may not be amiss.

A. Legal relationships of the school.

1. The phrase, *in loco parentis*, which is used to describe the relation of the teacher to the pupils, is extremely significant, and shows clearly that society recognizes in the school an institution which should do for the children what the parents would do if they could. In general, this phrase defines the authority of the teacher and also the force he may use in maintaining this authority. This authority is the same as that which any parent has over his child, and a teacher, unless there be some special legal limitation, may use the same force that a parent may use in securing obedience. But the phrase also carries with it the

idea that the teacher should have the same loving, sympathetic interest in the child's welfare that the parent has.

2. This same idea is involved in the matter of suspension and expulsion. The power of suspension rests with the teacher, but expulsion rests with the school board or school trustees. This provision removes any possibility of personal anger from the decision of a matter of such importance. Suspension should be the last resort of the teacher, for it practically means that either the pupil or the teacher must leave the school unless some mediating agency be found.

3. So, too, the purchase of supplies is wisely left in the hands of those who are elected by the people and are responsible to them. It is the teacher's business to keep the board informed as to the needs of the school, but not to buy the needed things except on orders from the proper authorities.

4. Certain studies are prescribed by either state or local law. The teacher should see to it that these legal requirements are kept. If it is desired to introduce a new requirement into the course of study, the sanction of the school authorities should be secured in advance of any definite demands upon the pupils. The advisability of requirements may be discussed with the school board freely, but the teacher should assume no authority with regard either to the setting up or the evading of requirements of this character.

5. Then there is the matter of compulsory attendance with its advantages and disadvantages, and the teacher has certain duties with respect to it. These duties generally consist in simply reporting the absentees to the proper officer. If the teacher does more than this, either in talking about the delinquents or in executing the law, there will probably be some ill-feeling aroused. The responsibility for the enforcement of all compulsory attendance laws rests with the school authorities and not with the teacher. This should not be understood to imply that the teacher has no duty toward delinquents beyond the one set down in the law. But officiousness, tactless nagging, and blustering, are always harmful.

6. Finally, there is the matter of keeping the records of attendance, of progress in studies, etc. These records are important because of their relations to other things, and not in and of themselves. The tendency to put such things off till a more convenient season is fatal both to the records and to the teacher.

These remarks are introduced in order to set forth those essential legal aspects of the school which have most to do with its orderly conduct, and are not designed to serve as a substitute for that closer knowledge of school law which every teacher should have.

B. Extra-legal relationships of the school.

1. The individual school is always a community interest. The pupils themselves directly connect the school with most of the homes of the community. They also give reports of the events that occur in school. Whether one wishes it or not, the teacher is in an organic relation to the community. For every social relation there is a correlative duty. The duty as regards the community life is participation, not criticism. The teacher should be "a means of grace" to the community. The community may have crude ideals, and while the teacher should feel his superiority to these ideals, he should not feel himself superior to those who have these ideals. Cynicism is almost natural to teachers who deal constantly with immature pupils. The habit of correcting faults in children and of telling them of their mistakes is indefensible when it is applied to the community. Co-operative betterment of the community and of its ideals is the "plain duty" of the teacher.

2. Moreover, the teacher's duty to the community as a whole is paralleled by his duty to visit parents and to confer with them about their children. This becomes progressively more and more difficult as we pass from rural districts to cities, and its desirability becomes progressively greater with its increasing difficulty. The reason for this duty is found in the essential unity of the aim of the home and of the school. Very naturally

children report the unusual rather than the usual school events, and so the parents are usually inclined to discuss the disorderly pupils of the school when the teacher calls. If the teacher yields to this temptation, his visit is worse than useless. Proper subjects for conversation are the child's health and disposition, his attitude toward school work and school associates, his home occupations, recreations, etc. These are the matters of common interest and are also the valuable things for both the parent and the teacher to know about.

Another great temptation is that of being agreeable rather than truthful. And there is a difference between being truthful and being brutal. Sincerity names, better than any other word, the attitude the teacher should have toward the parents of his pupils. Teachers have not always been above reproach in regard to this matter. Our conventional phrases are all ambiguous. Some teachers who say, "Sarah is getting along pretty well," mean, "Sarah is getting along pretty well—for such a stupid creature as Sarah is." Teachers should both mean what they say and say what they mean.

3. Patrons are related to the school and therefore have correlative duties. Chief among these duties are those of visiting the school frequently enough to know what the school is trying to do, of manifesting an interest in the work, and of being loyal to the teacher as long as he is worthy of loyalty. Patrons seek to excuse themselves for the non-performance of these duties by citing either their own home cares or the division of labor, which means that they regard the school as a separate institution. Sometimes, however, there is among patrons a sense of not comprehending the work of the school, or of being ill at ease because of not knowing just what to do when there. The latter can be overcome by a tactful teacher through the visits discussed above. The former can be removed by patrons' and mothers' meetings (discussed below). The teacher should not lecture the community on its duties to the school, but should be tactful in arousing a sense of this duty.

4. The initiative in bringing about this desirable community interest in the school rests primarily with the teacher. However clearly teachers may see that the community *should* assume the initiative, they should see equally clearly that the community seldom does take the initiative. Therefore, the teacher should plan to have the school entertain the patrons. These patrons' meetings should consist of exhibitions of regular class work—not show recitations; of entertainment of various kinds, from separate recitations, or “pieces,” to a light luncheon served by the children; of discussions of topics of common interest. By means of these meetings the patrons get a new view of the teacher, a keener sense of the actual difficulties of the schoolroom, a broader vision of what the school is trying to do. Such meetings not only destroy distrust but develop the coöperative spirit as well. These meetings in no way serve as a substitute for the visitation of the school by the patrons, but they sanely pave the way for such visits.

5. Implicit in all that has been said regarding the social relationships of the school is the idea that it is necessary for the teacher to be broad-minded, tactful, slow to anger, and skilled in healing wounds. Teachers should be broad-minded so that they may not be misled by the petty; tactful, so that they may achieve their ends and yet save their own energy—win by diplomacy rather than war; slow to anger, that they may be reflective rather than impulsive; skilled in healing wounds, that the damaging effects of misunderstandings may be minimized. Besides the ability to teach, the teacher should have the qualities of a minister and of an honorable politician.

IV. The conduct phases.

Having discussed the mechanical, spiritual, and social phases of school organization in their relation to the effective work of the school, the conduct phases demand particular consideration. Conduct is a broad term including all of one's actions towards persons and things. It includes the good and the bad, the impulsive and the consciously chosen, the trivial and the significant,

the transient and the permanent. Each teacher should reflect on what the conduct of the pupils should be, so that his ideals may become definite enough to be serviceable. The very lack of a standard of what conduct should be is responsible for much of the ill-success in managing schools. There are also false ideals of order. Some people think that order involves quiet of the *hear-a-pin-drop* variety, and at times order does involve this. Order, however, is the effective doing of what needs to be done. To bring the matter clearly before the reader, the following outline is introduced:—

A. What should the conduct of pupils be?

(a) Outside the schoolroom:—

(m) To and from school.

(n) On the playground.

(o) Getting into and out of the building.

(b) Within the schoolroom:—

(p) Toward the teacher.

(q) Toward each other.

(r) Toward the materials used in school, such as desks, books, papers, pencils, ink, maps, globes, pictures, casts, floors, blackboards, crayons, erasers, etc.

(s) Toward study and exercises assigned by the teacher.

(t) Toward the recitation.

Anyone who thinks about this matter will see that it is easy to state the ideal negatively—that pupils should not do certain things under the conditions mentioned. This negative phrasing of the ideal is not sufficient, and so a positive phrasing follows:—

(m) To and from school, pupils should engage in friendly conversation and games that do not cause delay or damage.

(n) On the playground, pupils should engage in games that afford exercise, that demand coöperation and skill, and that afford the least opportunity for trickery and fraud; and in a frank, open, and sincere manner.

(o) Getting into and out of the building, pupils should coöperate in keeping the line and in moving rapidly.

(p) Toward the teacher, the pupils should be respectful, obedient, and courteous.

(q) Toward each other, pupils should be sociable, coöperative, kindly, polite.

(r) Toward the material used in the schoolroom, pupils should be careful and considerate.

(s) Toward study and exercises assigned by the teacher, pupils should be diligent, faithful, conscientious, and should work independently.

(t) Toward the recitation, pupils should be attentive, courteous, willing to respond, fair.

B. Prevalent school offenses.

With this outline of pupil-situations clearly before us, it is easy to indicate and group the prevalent offenses against the order of the school. Following the outline just given:—

(m) To and from school:—loitering, annoying residents and travellers in various ways, stealing from farms or stores, torturing animals, quarreling, hectoring, fighting, and smoking.

(n) On the playground:—annoying persons who pass by throwing things at them or by being saucy, hectoring, bullying, fighting, quarreling, hurting each other intentionally and unintentionally, taking things from each other for fun, cruelty to animals, refusing to play together, and swearing.

(o) Getting into and out of the building:—jostling, pushing, getting out of line, talking, and making unnecessary noise.

(p) Toward the teacher:—various forms of disrespect, disobedience of varying degrees, “pestering the teacher,” lying.

(q) Toward each other:—making faces, bothering, causing pain by pins and kicks, rudeness in various forms, lying, stealing.

(*r*) Toward the material used in the schoolroom:—carelessness, destructiveness, making needless dirt and noise, stealing, defacing, etc.

(*s*) Toward study and exercises assigned by the teacher:—doing something else, attracting the attention of others by faces, drawings, and various antics, refusing to work honestly.

(*t*) Toward the recitation:—sauciness, rudeness, impoliteness, failure to attend, talking aloud or to others.

C. Offenses as springing from causes and motives.

Taking these offenses separately, one may ask from what causes or motives each may spring. Such an analysis will yield a long list of causes and motives. By cause of an act is meant that which produces the act but which is not consciously chosen by the person who acts. A motive is a chosen cause. Without following out the suggested analysis in detail, the causes and motives which underlie the prevalent offenses against the order of the school may be grouped and explained.

The causes include:—

1. Ignorance.
2. Impulsiveness.
3. Habit.
4. Carelessness or thoughtlessness.
5. Compulsion.
6. Laziness.

The motives include:—

1. Selfishness.
2. Meanness.

Often a child's offense is due to his ignorance of what the effect of his act will be, and evidently all the child needs is the knowledge which his experience brings and enough reflection upon it to make it available for future inhibitions. Impulsiveness means a yielding to impulse without reflection, and therefore differs from ignorance. The treatment for impulsiveness is something that leads the child to inhibit his impulses and to

reflect upon his conduct before its realization. Habit is akin to impulsiveness in that it proceeds without reflection, but it may have been consciously formed. The treatment for habit is something that inhibits the mechanical response to a given stimulus, or substitutes another response for it. A childish habit of throwing stones at cats may still exist as an impulse so strong that it leads a man to stoop down to get a stone when he sees a particularly offensive yellow cat on his front porch.

Carelessness means that one does not care what the result of his action may be, and is a feeling attitude added to impulsiveness or to habit. The presence of the feeling, however, does not warrant us in calling carelessness a motive. The general cure for carelessness is carefulness, which can spring only from interest and appreciation. Thoughtlessness means that one could have thought about the matter but did not. This may become a habit or may be accompanied by carelessness. Compulsion means that the doer was forced to do as he did; and everyone holds such a doer innocent because there was no free choice. Laziness may be a true cause of disorderly acts, especially that laziness which accompanies rapid physical growth.

No one of these causes is consciously chosen, and offenses from such causes indicate that the child is not morally at fault. But when we pass to a consideration of motives, we enter a realm where choice is the essential element of the act. Selfishness describes all those variations of motive which lead one to choose an act (or end) for the purpose of maximizing self. Meanness includes all those variations of motive which lead one to choose an act (or end) for the purpose of maximizing self through the pain or loss of another. Some selfish acts are commendable if they imply no injury to others and increase one's ability to serve others. All meanness is base.

The matter of dealing with offenses that spring from selfishness and meanness demands a more detailed treatment.

D. Inhibition by negation and by substitution.

There is a mechanism that underlies all conduct and teachers should understand it in order that its bearing on the treatment of selfishness and meanness may be clear.

1. Any incoming impression from a sensory nerve ending, or any idea present in consciousness, provided it has sufficient intensity, is followed by a motor reaction or attitude. This is the law of dynamogenesis in its broadest statement.

2. Inhibition means a stopping, a damming up of the outgoing motor impulse. The outgoing motor impulse, instead of being followed by the natural, usual, or habitual reaction, is held in check or distributed over so wide an area that no destructive motion takes place.

3. Inhibition by negation prevents the motor impulse from going out in positive conduct and utilizes it in holding one's self in. The opposite muscles are stimulated, and, hence, there is always a sense of strain. The time-honored *don'ts* of adults, if obeyed, simply result in the child's effort to refrain from doing the thing in question, and at best result in merely a negative kind of virtue.

4. Inhibition by substitution, on the contrary, means that the energy is directed into another channel. There is no damming up—no strain. The reaction which is substituted for the original one may be a commendable one, and thus the incipient bad reaction may be circumvented. This may be illustrated in various ways.

A child has formed the habit of pulling the cat's tail—a process dangerous to the child and painful to the cat. The simple command not to do it has little effect because whenever the cat comes around the pulling of its tail is suggested to the child. Now, if by suggestion or by giving imitative copy, one can teach the child to stroke the cat, we have a case of the inhibition of one impulse by the substitution of another for it.

Two small boys, three and a half and four and a half years old, respectively, were in a railway station, in care of their grand-

father, waiting for a train. A downpour of rain occurred, and the water ran under the door and down to the center of the room in four small streams. When the boys spied this water they at once started to play in it. The grandfather pictured to them the damage to their suits, their father's displeasure, and even threatened them with punishment, to no avail. A gentleman who understood the principle of inhibition by substitution walked across the floor, avoiding the stream of water by walking on his heels. He then asked these small boys if they were large enough to do that. They tried and succeeded fairly well. The gentleman then headed a procession of three which marched around the room and across the streams of water in the manner indicated, thus substituting a harmless reaction for one which was very undesirable.

Speaking now in more general terms, we may say that every object, event, or situation suggests to a person, be he child or adult, a certain reaction. This suggestion exists as an impulse or tendency to action. If the stimulus remains, the impulse remains. The stimulus can not always be removed. Therefore, the wisest thing to do is to substitute a good reaction for the bad one.

5. This principle of inhibition by substitution has a very wide application in life. Rudeness will disappear if we can succeed in teaching the child to be kind. A boy worked with carpenters the greater part of one summer, and, of course, picked up the profane expressions which they applied to hammers when the latter struck their fingers instead of the nails. The boy did not wish to swear, but did not know how to check the impulses. Finally an old man suggested to him that he whistle instead of swear when he struck his finger. This he succeeded in doing and thus escaped considerable profanity.

When in connection with this principle one recalls the Lange-James theory of emotion, there is abundant proof of the principle already stated, viz., reactive conduct forms character. If the teacher can succeed in getting the child to respond in right

ways and good ways to all the stimuli that play upon him, there are no problems of discipline left to consider.

E. Kinds of punishment and their relation to the child's sense of self.

Having now set forth the values of inhibition by negation and by substitution, the punishment of the prevalent school offenses may be taken up. Whenever offenses arise from what we have called "causes," such as ignorance, habit, etc., kindly admonition, teaching, help, are the things that prove efficacious. When, however, offenses proceed from selfishness or meanness, there is need of effort on the teacher's part. If the principle of substitution fails to secure the desired formation or re-formation of the offender, then resort must be had to punishment.

The noun *punishment* comes from the verb *to punish*. To punish is to cause pain. The word originally meant *to cut* or *to slash*, and was later attached to the feelings that result from cutting or slashing. Psychologists are pretty well agreed that pain is that which retards or hinders the mental life. Therefore, if the pupil's mental life is taking on the form of the bad, it is the parent's or the teacher's duty to retard or hinder that particular form of mental life. Punishment is pain inflicted with the purpose of reformation. Pain tends to destroy the reaction which produced it (and for this reason the past, especially our childhood days, seems so happy as we live it over in memory), and also to destroy the reaction associated with it. These two tendencies of pain are the basis of all reformation through punishment. The "discipline of consequences," defended so ably by Spencer,¹ depends upon the child's associating his pain with his own antecedent actions, and upon his recognition that his pain is but the inevitable effect of the immutable laws of the universe. Pains tend to act as strong inhibiting ideas in young children, and in older ones, pains lead to reflection, resolution, and changed conduct.

Since the efficiency of pain as a reformative agent rests

¹ *Education*, Chapter on Moral Education.

upon its inhibitive power, and since the inhibitive power is possible only through association, the child should understand clearly why he is punished so that he may regard the punishment as a consequence of his own act. If the child regards the punishment as the manifestation of the parent's or teacher's authority, or anger, or ill-will, he will rebel against it; and rebellion is not, and never leads to, reformation.

If one should make a list of all the particular punishments used by teachers in schools, he would find that all have this common characteristic, viz., they cause pain. And we should find, further, that punishments readily fall into classes, as follows:—

Kinds of punishment:—

- (a) Corporal punishment.
- (b) Loss of social position.
- (c) Appeals to the sense of honor.
- (d) The subject matter as a punishment.
- (e) Reparation.
- (f) Saturation.

(a) Corporal punishment—Corporal punishment includes all pain that is caused by overstimulation of any part of the body, from merely standing on the floor to the blood-letting form of whipping; it is the production of sensuous pain. The violation of nature's laws always yields pain of this kind, and to the child who has not learned to think of his self as separate from his body, corporal punishment is the most natural and effective thing in the world. In order to be clearly understood, it should be borne in mind that inhibition by substitution, when it brings the desired result, is far better than corporal punishment, and that only offenses that spring from selfishness and meanness and which do not yield to the influence of inhibition or entreaty are being considered. In such cases the child can learn, only by the mediation of sensuous pain, that society has the "right to resist his arbitrariness."

Corporal punishment should never be unduly severe, nor

be indiscriminately used. The brutal forms, such as stretching on tip-toe to reach a mark or holding out one's hand for several minutes, and the dangerous forms, such as boxing the ears, should not be used at all. In general, the recurrence of situations that seem to demand corporal punishment proves that it has been ineffectual, and that it should be abandoned.

(b) Loss of social position—By the time the child comes to school, he has acquired a sense of himself as related to others, a social consciousness that is strong in some respects and weak in others. In short, the child has come to think of himself as having a certain social position. This sense of social position is pleasurable to the child, and to be deprived of it is painful. Therefore, if through either selfishness or meanness the child has committed an offense, he may be made conscious of this offense and be brought to a resolution about future conduct by the loss of social position.

A boy in the first grade who had been playing along the creek, "for fun," as he said, when he should have gone directly home, was required to come to school and to go home with some adult for some time. This sense of isolation from his fellows led him to reflect, and was much more effective than either corporal punishment or scolding would have been. Having a pupil stand on the floor, stay in at recess, sit on a front seat, etc., are forms of loss of social position. These forms are effective only when the isolation is mentally real, for spatial isolation amounts to nothing. And it is true of the loss of social position as it is of corporal punishment that its effectiveness rests upon the association of ideas and the resolution which the child himself makes.

Corporal punishment and loss of social position may be combined in one punishment. The child may be humiliated by receiving corporal punishment in the presence of his peers. Usually, however, such procedure results in a real or feigned indifference to the sensuous pain and the loss of social position. The child soon outgrows the stage in which corporal punishment

is effective. Children over ten years of age are often harmed more than they are benefited by corporal punishment, for they feel that their bodies are not their real selves. So, too, children outgrow punishment by the loss of social position. They become independent and often do not care whether they stand in the same relation to others that they formerly occupied. Especially do they look with indifference upon the simple spatial isolation which is all the teacher can, unaided, bring about. But if the school is a real social group, and if the social group shuts the offender out from participation, then the offender does care.

(c) Appeals to the sense of honor—Right out of social relationships there grows the sense of honor,—of loyalty and devotion to the right. The sense of honor implies a conceptual stage of thinking and also the existence of ethical ideals. "Ideals are the forms which we feel our conceptions would take if we were able to realize them in a satisfying degree of unity, harmony, significance, and universality."¹ The sense of honor also implies the existence of a willingness to conform one's conduct to accepted ethical ideals. Assuming, then, the existence of the sense of honor, an appeal to it always makes the one to whom the appeal is made feel that he has in some way fallen short of his ideal (ideal pain), and that he ought to conform to the ideal. The imperative, or command, is, in all such cases, internal; and the resulting activity is self-activity in the truest and most genuine sense. Such activity is self-government of the purest type. This is the true end of all discipline—to lead the child to govern himself aright.

But ethical ideals do not spring into existence all at once. Many persons who would not steal a horse or break into a house because of restraining ethical ideals, will, nevertheless, cheat in an examination or hand in, as their own, work that is not wholly their own. Ethical ideals are as truly dynamic as concepts are, and therefore the arrival at a certain age limit does not imply the existence of any clearly defined set of ethical ideals. But

¹ Baldwin's *Elements of Psychology*, p. 283.

in so far as such ideals do exist, the most effective means of developing the child into a genuinely moral being is to lead him to conform his conduct to his own sense of honor.

(d) The subject matter as a punishment—Many school offenses consist essentially of a wrong attitude of the pupil toward study either in the study period or in the recitation itself. Since the child has failed to devote himself to study as he should have done, it appeals to many people as simple justice that the delinquent offender should be punished by being made to do the work he has failed to do. And this neglected work must be done outside of regular school hours. The pain produced by such a punishment consists in the fatigue attendant upon doing the work, in the loss of pleasures the offender might otherwise have enjoyed, and in the humiliation that arises from not being able to do as others do. This pain may lead the child to devote himself to his tasks and duties so that he may avoid future pains, but it is very likely to be associated either with the subject matter itself or with the teacher, and thus to grow into a dislike.

(e) Reparation—Reparation, as a form of punishment, is the application of the principle of justice to the settlement of offenses which have resulted in a damage that may be restored. If a pupil in his play accidentally break a window glass, the only suitable punishment is the restoration of the glass. If it were broken maliciously, there should be restoration and perhaps some additional pain to act as a future inhibiting idea or as an incentive to reflection. Many of the differences among children are of the kind that may be best settled by reparation. Apology is a form of reparation in which one expresses regret for his offense and asks that the offended one forgive it. Apology is an evidence of fine spirit when it is self-initiated, but is completely shorn of its worth and efficiency when it is forced.

Reparation should always be chosen by the offender, should be in proportion to the injury done, and should cause the offender some effort. The parents of some pupils once offered to repay the damage their children had done, and were with difficulty

convinced that their children would really profit by saving their pennies and even car fare to pay on the installment plan. The teacher's plan was to pay the damage and then have each child pay him a minimum sum each week until the whole was paid, for he did not wish these children to get the idea that their parents could, by any sort of generosity, wipe out the offense by one payment. The easier plan is to "square accounts" at once, but the easiest plan is not always the best for the offender; and teachers should never lose sight of the offender's genuine reformation.

(f) Saturation—Saturation, as a form of punishment, is compelling the offender to repeat the offense until he is sick of it. All have heard of compelling children to eat apples before the school until they could eat no more, to make faces till their faces ached, to chew gum till they could chew no longer. This form of punishment has considerable value in training the lower animals into (to them) unnatural habits, and also in getting very young children over certain actions which to them seem "smart." It is wiser, in the home, not to notice such actions and to let the child outgrow them, for if these things are unnoticed they soon lose their attractiveness to the child. In school, however, such actions interfere with effective work and should be dealt with by some other method than that of saturation, for saturation usually produces more interference with the work of the school than do the offenses for which it is a punishment.

§ 31. CONCLUSIONS REGARDING DISCIPLINE.

Taking a broad view, it is evident that the ultimate value and effectiveness of all punishment lies not so much in the inhibitive value of the pain inflicted as in the right conduct which issues from the reflection to which the offender is led by the pain of the punishment. The primary object of the teacher, then, in administering punishment should be to bring the child to reason, to lead him to *re-form* himself. In fact, punishment is success-

ful only in so far as it leads the child to a new, saner, more ethical thought of himself.

But, after all, punishment is but a small fraction of school discipline—the negative side, for the worthy thing the child is led to do because of interest and coöperation is as truly *formative* as is the refraining from the bad thing because of punishment. And, in simple truth, punishment has only an external result until there arises a formation of the right attitude through reflection. All discipline, therefore, is formative, and punishment is formative only by being reformatory. The teacher's conception of discipline should be that it is this character, or attitude, forming aspect of school organization and management, and not merely the more or less warlike dealing with the obstreperous. *Nine-tenths of the problem of school discipline is solved if children are kept interestedly busy doing worthy things.* The one-tenth is due to selfishness and meanness in children and to the irritability and lack of poise of the teacher.

The highest type of morality (that of pure self-determination, or conscious choice of the good for its own sake) is indeed the ideal towards the realization of which the teacher's every effort should be directed, but it is doubtful whether much of it will be seen in the actions of elementary school pupils. The moral development of the child is even slower than his intellectual development and more subject to arrested development. This fact renders it doubly important for the teacher to have a clear vision of the end to be reached, and also for him to understand the process by which the end may be reached. The human will is like a man who can lay brick, but not make them, in that it can command but not originate movements. The first sense of self comes as the consequence of involuntary movements (random, reflex, sensory, impulsive, instinctive, etc.). The sense of power to do, of freedom of the will, of pure self-determination is possible (genetically) only on the basis of involuntary movement. Hence, morality at first exists as conformity to external standards set up by the family and society. By

conformity to these standards there grows up an inner sense of what is good, the conscience. The whole integrated gamut of experience finds its concentrated reality in the act of will to which conscience leads. Therefore, the whole matter of elementary school discipline may be summed up by saying:—

1. By doing good and acceptable things under the suggestions and directions and even punishments of the teacher, the child gets a sense of what standards of morality are accepted as highest by his society.

2. By participation (by doing) the child's inner sense of ethical attitude is formed and refined into what we call conscience.

3. By initiating activity for himself, in response to situations not previously experienced, the will of the child develops, and thus his character, or deepest, inner self is formed.

4. As knowledge increases and insight becomes keener, finer ethical discriminations are made (through reflection upon experiences), and thus the individual becomes independent in his will as he is also independent in his intellect.

CHAPTER VIII.

THE RECITATION.

§ 32. WHAT THE RECITATION NOW IS.

Before considering what the recitation should be, it is well to see what the recitation now is. Fortunately for our purpose the recitation has not drifted much from its primitive linguistic meaning. Recitation (*re*, again; *citare*, to quote, to say) literally means "the act of saying over again." This word was probably coined by some old-time Latin schoolmaster, and was an excellent one to describe what probably occurred in his school. It was but natural, also, that when subjects other than Latin became parts of the curriculum, the method of teaching Latin should be applied to these subjects. Many men now living distinctly remember that in their school days the teacher merely "heard them say their lessons." The periods of study were devoted almost as exclusively to memorizing as they are in Chinese schools to-day, and the recitation periods to a saying over again what had been memorized. It was believed that by this repetition, knowledge would become a permanent acquisition, and in this belief there was an element of truth. This theory and practice, however, neglect the power of interest, and the value of getting the idea before getting the symbol of the idea.

Still, in this old memory-repetition belief there was enough of truth to enable it to survive even to the present day. One who visits elementary schools frequently can scarcely fail to notice that much of the recitation time is now devoted to "saying over again what the book says." The question as to the part of the recitation period now devoted to *re-cit-ing*

was recently put to a teachers' institute of two hundred members, most of whom were engaged in teaching rural schools. The average answer thus obtained is that nearly three-fourths of the recitation time is actually spent in this way. This may be too large an estimate for rural schools as a whole, but it is perhaps fairly typical of the truth. In graded schools there is relatively much less time spent in this way. The fact remains, however, that in our elementary schools (and often in secondary schools as well) the literal meaning of recitation is fairly descriptive of what actually occurs in the recitation.

Why the one who conducts such a process should be called a teacher is difficult to understand. Such a process may be keeping school, but it fails to meet our modern ideals of what constitutes teaching. Before we can decide as to what the recitation should be, we must inquire more closely into what teaching is.

§ 33. WHAT IT IS TO TEACH.

An illustration may well precede an attempt at definition.

The natural world about us—air, motion, land, water, heat, cold, trees, flowers, sunshine, grass, animals, stones, etc., is constantly pressing against our nerve-endings; and in consequence of these stimuli we adapt ourselves to them, or to the natural world, or to Nature. The evidence of this adaptation is our changed conduct or behavior. Nature teaches us many things which remain for the most part unconscious, except as we become conscious of them by their absence in others. One learns to eat when hungry, to come in out of the rain, etc. If one does not know enough to eat available food when hungry, or to come in out of the rain, he is justly regarded as extremely stupid. "The insistent forces of the world have not been able to bring about in him the simplest kind of a reaction." The test of one's having learned from Nature and of Nature's having taught one is found in his conduct or reactive behavior in the presence of certain stimuli. But back of this reactive behavior

there is an organization of intelligence, a changed sequence and character of the person's mental life, or of his ideas. The real teaching by Nature must be the bringing about of this changed sequence and character of the mental life. Whether one looks upon this teaching of Nature as conscious on its part, or as a means by which God teaches us, or as a fortunate and happy accident, does not in the least affect the view here advanced. viz., Nature teaches human beings by influencing the sequence and character of their ideas.

Another illustration of what teaching is may make the matter clearer.

Human beings are so constituted that they instinctively tend to imitate what they see about them, at first for the sheer pleasure of doing it, and later for utility, for ambitious ends, for religious ends, for æsthetic ends, or what not. It has been claimed that all industrial inventions are imitations of natural things, as, for example: the savage's club is an imitation of the human arm and clenched fist; the sickle of the reaper, an imitation of the old hand sickle and the motion of the arm in using it; barbed wire, an imitation of the thorns of the osage tree which had long been used as a fence. One's use of gesture in describing things is the effort to imitate the outline or qualities of the things: even the wide-opening of the eyes when speaking of large things is an imitation of the effort of seeing large things. The child astride a stick imitates the action of a horse and rider. This account of the imitation of things could be extended indefinitely, but enough instances have been cited to prove that reactive behavior is influenced by the animate and inanimate things about us because of our instinctive imitative tendency.

Moreover, one imitates persons both consciously and unconsciously. The demand of the law that the teacher be a person of good moral character is the conscious, legal recognition of the fact that children unconsciously imitate older persons who control them. The mother tongue is chiefly acquired by an unconscious imitative process. One learns things from

certain persons without even knowing that he is learning. The converse of this, that persons and things teach without one's knowing that he is taught, is true. This unconscious influence of persons and things is very important because of its amount and because of its relative value in life. But what is this unconscious teaching of persons and things? The evidence of such teaching is found in terms of reactive behavior, in habits, in conduct. But back of these there must exist a corresponding organization of mental life which finds its expression in these forms. As was said above, the real unconscious teaching of persons and things must be the bringing about of a changed sequence and character of the mental life. This accounts for the great unconscious influence of the natural and social environments of the child, especially when he is in the plastic, imitative stage of development.

The tuition of Nature and the unconscious tuition of persons and things have been illustrated and discussed. But there is another kind of teaching which is done consciously and with purpose. This is the sense in which the term teaching is ordinarily used—the narrower sense of the schoolroom. Suppose that a child is taught to add fractions whose denominators are unlike or unequal, or to extract the cube root of a number, or that the Confederates were victorious at the battle of Bull Run, or that a verb should agree with its subject in person and number, or any one of the thousand things usually taught in school. What has been done in teaching him this fragment of knowledge?

The child's knowledge is shown by his reactive behavior, he replies properly to your question in words or in action of some sort, he performs the problem with figures or with objects, etc. By the child's reaction you judge of his knowledge. Back of his conduct there is an organization of his mental life which was not there before he was taught. But if, after efforts to teach him, his reactive conduct is the same that it was before these efforts, you rightly conclude that he has not learned, and that

the teacher has not taught. One may go through the motions of shoveling all day without moving an ounce of sand or dirt, and one may go through the motions of teaching without really teaching. The changed mental life of the child is as essential to the teaching process as is the movement of some material to the shoveling of sand. "By their fruits ye shall know them" is as true of teachers as it is of trees.

But *how* has one been able to bring about this changed mental life—this changed sequence and character of the child's ideas? One may have plied him with questions, or made him say over words, or had him handle objects, or make something in sand or in clay or from paper, etc. But whatever the teacher may have done, it may be expressed in general terms as a massing or utilization of stimuli. The teacher has brought some stimulus or other to bear upon some nerve-ending or other, and this stimulus has been followed by a change in the child's mental life.

Summing up the essential ideas that have emerged from these analyses of the teaching of Nature, of the unconscious tuition of persons and things, and of the conscious, purposed teaching of the schoolroom, we may say:—

1. Teaching is influencing or changing the sequence or the character of another's ideas, a change which would not have occurred had it not been for the act of teaching.

2. The only way of knowing that this change has really occurred is by an interpretation of the person's reactive behavior, his conduct, his reaction, his activity.

3. The teacher, in order to bring about this changed mental life, has brought certain appropriate stimuli to bear upon the child's nerve-endings.

§ 34. THE RELATION OF REACTIVE BEHAVIOR TO LEARNING AND TO TEACHING.

Reverting now to a former inquiry as to what the recitation should be, it is clear that it should be, distinctively, a period of effort on the part of the teacher to bring to bear upon the

child those stimuli which will bring about the desired change in the sequence and character of the child's ideas as a basis for the right kind of reactive behavior. Before continuing the discussion it may be well to examine a little more fully the relation of this reactive behavior to the changed mental life of the child.

Behavior follows the changed mental condition, but there is another equally important truth about it. The behavior is motor activity of any and all sorts; it is equivalent to expression in its widest sense. Anyone can understand that this action of the muscles excites nerve-endings. As a consequence, every motor activity causes a return wave of impressions which stream back to the central brain and which are followed by sensations of having acted. These sensations of having acted—the so-called return wave of consciousness—are extremely important because they are essentially educative. From these sensations of having acted one decides upon the worth of the object to him, he assumes an attitude toward it.

The summation and integration of these separate attitudes towards things, persons, events, relations, institutions, ideas, etc., constitute one's attitude toward the world as a whole. And this attitude toward the world as a whole is a revelation of what one really is. As James says: "The motor consequences clinch the impression." It is through this outgoing motor activity of the self (either actually or ideally) that the self grows. Hence, the reactive conduct of the child reveals his mental life and at the same time organizes the self. From this explanation of the functions of motor activity one is able to understand this wide-reaching pedagogical maxim: "No reception without reaction; no impression without correlative expression."¹

It is now clear that the teacher in the recitation should use the reaction of the child for two purposes, viz., to find out what organization of the mental life, or self, has actually occurred, and as a means for further organization of the self. The motor activity of the child both forms and reveals the child's mind.

¹ James' *Talks to Teachers*, p. 33.

It is evident, therefore, that the "saying over again what the book says," the review, is a kind of reaction, is a method of teaching, and as such has a proper place in any system or method of instruction. The time to be given to this kind of work will depend upon the nature of the subject or knowledge taught and upon the capacity of the child. The division of subjects into form and content studies is valuable to the teacher in this connection as showing where repetition is necessary. As, for example, when in arithmetic a multiplication table has been presented concretely, when the ideas are mastered, and the symbols understood, then repetition is valuable as the only efficient way of gaining a ready control of the symbols. So, too, in making certain vocal sounds, in marking the sounds of letters in words, in spelling words that recur frequently, in mastering rules and definitions that are frequently used and have been inductively developed, repetition is proper enough. In general, wherever the use of symbols has to take the form of habit, or wherever motor activity should take this form, there repetition, drill, saying over again, doing over again, viewing again (review), are in place. But in all this repetition work one should have regard for the capacity of the child to form habits. This capacity is not a constant in the life of any one child, and much less is it equally great in all children. The teacher should discover what the capacity of the child for this particular kind of work is by carefully studying the individual child, guided only by this general law, viz., the reactive behavior of the child should be fairly and adequately representative of what his mental life really is.

Granting the general law just stated, and conceding that reactive behavior integrates knowledge with the use of knowledge, that is, that it forms character, one should inquire into the various forms of this reactive behavior, of expression; and, later, ask if the verbal reaction is sufficient for the educative purposes of the school. One should bear in mind in this discussion that behavior has both a positive and a negative phase: "to do and

not to do are equally forms of behavior." Every internal stress or strain is simply behavior that does not take large visible forms such as jumping the rope or running.

In presenting this subject to teachers, the author has succeeded in getting many ways of dividing it, and now offers the following outline made by one of his classes. The classification is not exhaustive at all, but is designed to show at a glance that the field of reactive behavior is much wider and more significant than teachers usually think it to be.

FORMS OF REACTIVE BEHAVIOR OR EXPRESSION.¹

I. Vocal:—

1. Verbal.
2. Whistling.
3. Singing.

II. Hand:—

1. Writing.
2. Drawing.
3. Painting.
4. Cutting.
5. Sewing.

III. Hand and body:—

1. Modeling.
2. Carving.
3. Weaving.
4. Construction work.
5. Manual training.
6. Domestic science.

IV. Body as a whole.

1. Dramatization.
2. Gesture and bodily expression.
3. Games.

This outline omits many forms of physical activity which

¹Parker's *Talks on Pedagogics*, pp. 223-260, has a slightly different analysis and treatment of "Modes of Expression."

may be used by the teacher, and emphasizes only those which the teacher may use in forming the child in the schoolroom.

If any one of these forms of expression be analyzed, its formative aspect is at once revealed. Take, for illustration, painting: proficiency in painting indicates that one has become skilled in expressing ideas with color. And to have a pupil paint means that the teacher is striving to organize him in a certain definite way. Skill in any one of these forms of expression means that one's inner self has been changed there-through and thereby. Motor skill carries along with it the correlative organization of the mind. This is simply saying again, and for emphasis, that reactive conduct forms character.

Going back now to the question, Is the verbal reaction sufficient for educative purposes? an answer may be readily formed. The child learns to use oral words as symbols of ideas early in life and this process of learning continues till late in life. When he enters school the book presents a new set of symbols for the child's ideas, the crooked marks of the printed page. The child is in constant danger of giving the oral equivalent of the printed symbol without having the equivalent meaning in consciousness. Especially is this true when the teacher estimates the child's knowledge almost wholly in word reproducing ability. Therefore, during the first twelve years of a child's life, words should be used chiefly as symbols of meanings already obtained. After the child has thus acquired a stock of words which express his ideas, he may increase his stock of ideas by comparing them with one another, or he may study the printed page whose separate symbols have meanings, and thus get new meanings.

The age of adolescence is usually taken as the time at which the greatest transition to the use of symbols as means of idea-getting takes place; but even this is somewhat in doubt, although our plan of secondary school work is really based upon the assumed truth that the child is able to get ideas from the symbolism of the printed page. In many children the greatest

transition comes much earlier than adolescence; in some, later than this; and in various degrees from the earliest use of symbols. The reality of the child's expanding mental life is ill-fitted to the preconceptions of adults. The central point, however, is that since the verbal reaction sinks early in the child's life to the plane of unconscious habit, there is always danger of verbalism in elementary school work; and that, therefore, to be assured of the child's real mental condition, to insure the proper organization of the growing self of the child, the teacher should utilize other forms of expression along with the verbal reaction.

Further than this:—the forms of expression already given are the basal reactions upon which the greater part of the motor life of mankind is founded. Industrial processes, on the motor side, are combinations of these simpler and more fundamental reactions. The sculptor is the fruition of modeling and carving; the actor, the realization of the dramatic instinct or tendency; tapestry weavers, such as William Morris, combine the art instinct with the refinements of simple weaving. The arts and industries, the occupations and callings, the so-called fine arts, the motor and æsthetic and volitional life of adults, arise from these simpler forms of expression as the purity and beauty of the lily arise from the unseen purity and beauty of soil, moisture, and heat.

Therefore, for the child's self to be organized into the mental equivalent of these forms of reactive behavior is simply to organize him into a human being. He may not paint beautiful pictures, weave matchless tapestries, act out Shakespeare's superb tragedies, construct palatial dwellings, nor shape the destinies of a great nation; but these ennobling and helpful things, and many others besides, are open to him; and, ideally at least, he can truly live in these great achievements of the race. The control of these fundamental forms of reaction enables one to project himself into the life of the race—past, present, and future. The basis of sympathy with those who work at forge or in factory is found more in muscular attitude than in intel-

lectual idea. To one who has been trained even a few years in the utilization of color to express his ideas, no great painting can be insignificant or uninteresting. To one trained to use hammer and plane and saw, architectural achievements have a world of meaning. To him who has become humanized, all things human are interesting.

Time was, perhaps, when the classical languages provided the best humanizing material available for school use; but with the present industrial, social, and ethical organization of society, the realization of human attitudes through actual behavior and not through the study of the classics, should commend itself to all. This claim is in no wise counter to that of literature whose value in furnishing ideal attitudes as complements of real attitudes is inestimable. The essential point urged here is that the fundamental forms of expression are necessary to any adequate interpretation of the past, to any adequate participation in the motor, intellectual, and æsthetic life of the present, and necessary to any adequate participation in the ideal life of the race.

In this analysis of the field of reactive behavior, it is not the purpose to state specifically the reasons which warrant the use of any of these forms of expression as school subjects, but simply to show the relation of expression to the development of the child's self and to show also that the verbal reaction should follow, not precede, in elementary schools, those more significant forms of expression which integrate the child's experiences into a self in harmony with the human pattern. From these considerations it follows that freedom in the use of oral language, in all cases where tact cannot secure both freedom and accuracy, is to be preferred to accuracy. It also follows that freedom in the use of gesture and illustrative drawing by pupils should be encouraged. Life, spontaneity, freedom of thought and expression are worth seeking after; but in large part they are unconsciously copied from the teacher by the pupils. A lazy, dull, prosaic teacher never taught any thing but a dull, lazy, prosaic school. The teacher should realize that a free, enthusiastic

expression of an idea in any form, crude though it be, is more educative to the child than an accurate expression realized listlessly and grudgingly.

Moreover, the teacher should realize that children differ widely in respect to their reactive behavior. Some children throw their deeds into the world with utter abandon; others are reticent and shy, and seem to dam up the expression within the limits of their own bodies. The former are of the so-called "motor type," the latter of the "sensory type." The motor child is apt to seize upon the incoming impression eagerly and to react immediately, unthinkingly. He needs to be checked, to be held in, to be forced to think twice or even thrice before he acts. In short, he needs to be made reflective, self-conscious. The sensory child, on the contrary, deliberates too much, is too cautious, thinks too much of self and of the relation of an expression to the self. Such a child needs to overcome this reticence, needs to be so stirred up that self is forgotten, that the expression, because of its intensity, breaks down all inhibitions and becomes a torrent. Reactive behavior other than the verbal form, with not too great coördination and complexity, will secure the best results from children of the sensory type, while some highly coördinated reaction requiring thought for its performance is best for those of the motor type.¹

In this section (pp. 138-145), it has been shown that reactive behavior forms character; it is through motor attitude that the child gets his sense of self, his sense of others, and his knowledge of things. All of this motor activity (except that which is unconscious) has back of it an active intelligence, thinking, self-activity. Genetically considered, all knowledge rests upon motor adjustment to some stimulus or other. We not only learn to do through doing, but we also learn to think and to feel through doing. Upon this motor basis other and higher forms of mental activity may and should be built; but without this basis all else is built upon sand and is lacking in that quality of

¹ *Story of the Mind*, p. 166 ff. J. M. Baldwin.

genuine appreciation which can exist only on the basis of actual experience. Hence, if it be the aim of education to humanize children, the only safe method is to accomplish this through activity. Through behavior one first receives and then expresses his thoughts and feelings.

§ 35. THE MEANS AT THE DISPOSAL OF THE TEACHER FOR SECURING REACTIVE BEHAVIOR.

It is necessary, from the standpoint of teaching, to pass from a consideration of the forms of expression, their place in teaching, and their relative importance, to a consideration of the means at the disposal of the teacher for securing reactive behavior. It has been stated that teaching brings appropriate stimuli to bear upon the child's nerve-endings. If the reaction is not a proper one, the teacher utilizes additional stimuli. He may present the object again, have another child repeat the previous statement, ask a question, show a picture, make a sketch on the blackboard, make a model of the thing under consideration, etc. But in all this he simply brings stimuli to bear upon sight, hearing, taste, smell, tactile, or muscular organs, some nerve-ending is specially excited. One does not usually consider this excitation of the nerve-ending as important for it is looked upon merely as a means to an end. This excitation of a nerve-ending is followed by (causes?) a change, or excitation among the brain cells; this changed cerebral condition is followed by (causes?) a change in the sequence and character of the child's mental life; this changed sequence and character of the mental life is followed by (causes?) another brain condition, which, in turn, is followed by (causes?) an expression, or motor attitude.¹ Since this is true, the next important topic to be considered is the various kinds of stimuli the teacher may use to bring about a truly educative activity.

¹The question here raised as to whether *is followed by* is equivalent to *causes* is important for philosophy, but not for skill in teaching. All teachers whatever their belief, act as if the relation between bodily states and mental states were a causal one.

The first and most obvious classification is the one based upon appeals to eye and to ear. The teacher may successfully appeal to the eye through his own hand or bodily behavior. A gesture by the teacher often serves better than words would have served. A look is frequently better than anything else would have been. An object or a picture may also be used to secure the desired reaction.

The human voice, however, is the educative instrument *par excellence* because oral words are usually significant, and because oral words are so well adapted to the capacity of the child; their meaning may be changed by emphasis, intonation, or accompanying gesture; simple words may be used in place of new or difficult ones. Supplemented as oral speech may be by gestures, drawing, diagrams, etc., it becomes one of the most efficient modes of expressing thought to others and of arousing thought in others. This well-nigh perfect instrument of symbolic expression may take the form of a command, a polite request, a suggestion, or a question.

§ 36. THE NATURE OF THE COMMAND AND OF THE POLITE REQUEST.

The verbal command is the expression by means of words or gesture of one person's will regarding the activity of another person's will. In the school the teacher stands as the legal or temporary parent of the child whose development is to be brought about through obedience to the teacher's will. This will of the teacher may be expressed positively or negatively. With young children the concrete part of the command remains in consciousness while the abstract elements fade quickly away. To most children *do not* is an abstraction. The mother who left her children alone, saying, "Do not put beans in your noses" did not understand psychology very well. Hence, with young children, commands should usually be stated concretely and positively.

But beyond the form of the command there is always a

content, a something which is to become the content of the child's will. This content may be suitable or not suitable. Too often both parents and teachers command children just to show that they have the power to do so. Whenever a command is an infringement on the personality of the one commanded, there is inward rebellion, and with this inward rebellion there is either open defiance or else listless, wooden conformity. The child's will takes on the commanded form simply because he feels that he *must* do it in order to avoid painful consequences to himself. He only passively acquiesces. In this passive acquiescence there is less of growth and power than there is in active choosing without the presence of compulsion. The working of commands may be illustrated by a little incident which occurred recently.

F., aged nine, was playing in an unused street with his sister two years his junior, and with two other boys of about his own age. The little girl was watching the boys who were engaged in a spirited contest as to which one could hit a dilapidated sign-board the most times out of twelve throws each. They were keeping the score and adding it up after each round of throws. Suddenly the mother, from the basement door, called the little girl who shiftlessly shuffled toward the house. Then she called to F, "What are you doing now?"

"Oh, just throwing rocks at that old sign over there."

"Well, you come right here."

"What do you want, ma?"

"I want you to come here this minute."

"Do you want me to do something?"

"Come here! Do you hear me?"

"Y-a-a-s. But ma, we're tryin' to see who can hit that sign the most times out of twelve throws, and I've got—"

"If you don't come here you'll get something else."

"Oh, durn it all! A feller can't do nuthin' without you git right after him. Can't have no fun without a fuss."

As he went toward the house, he turned back to say:—

"Kids! You stay here and I'll be back as soon as the old woman cools off a bit. She's awful cranky."

And he was back in four minutes, having slipped away from his mother who had by this time forgotten her anger.

Evidently F. regarded the command of his mother as an infringement upon his rights as a boy. And what did he get out of his experience? A hardened heart, and an increased degree of an already great irreverence. When he is nine years older and his mother pleads with him to stay off the street or not to smoke, etc., he will probably say to himself:—

"I'm going to do just as I please. I'd rather be with the fellows than fussed at here at home by an old crank like ma is."

Arbitrary and unreasonable commands make children lawless and irreverent. It is easy to treat children as we treat pieces of crayon—toss them hither and thither as we please, and difficult really to respect the child's personality and rights. Sometimes the personality of the child is deformed, degenerated, tinged with meanness; and for the child's own good his depraved personality must be made to conform to the better personality of the teacher's or parent's will. But all such cases prove a previous error on the part of some one other than the child, and somebody other than the child should sit upon an ash-heap clad in sackcloth in humble repentance for his sins.

The polite request, however, does not imply the compulsion which is always present in the command. The request simply asks, in substance, if the child will do the thing in question. "Will you bring me a sample of red clover from the meadow to-morrow?" is a thing whose content becomes realized in the child's action by virtue of his own choice. This choice will depend upon his respect for the teacher, and the child yields to the polite request because of his desire to do what the teacher wishes him to do. From the standpoint of the development and growth of the child, it should be evident that there is more of real educative value for the child in action which is based upon polite requests than in conduct based upon commands.

§ 37. THE NATURE OF THE SUGGESTION.

In the suggestion, so-called, the content is simply brought before the child's mind as a possibility; to realize it in terms of behavior he must decide and then execute his decision; the content, or end, or realization, seems to be his own and not another's. Hence, the suggestion leads to a more genuine development of the child's will than does the command, or even the polite request. "Wouldn't it be fine if someone should bring in leaves from the red oak and the white oak to-morrow?" is an example of suggestion. What is really desired in behavior is not mere conformity (though that may be at times very desirable), but rather a growth of self into a spirit of conformity. The suggestion has a strong tendency to promote this growth. It is in the wielding of suggestion with tact that many teachers fail. A tactful and opportune massing of suggestion secures better results in orderliness, even from the standpoint of mere conformity, than does brute force, however brutal it may be. Kindliness, polish, and politeness to children should be more prominent in teachers than they are, if for no other reason than because of the increased effectiveness which they impart to oral suggestion.

CHAPTER IX.

THE RECITATION (CONCLUDED).

§ 38. THE NATURE AND KINDS OF THE QUESTION.

Although in the actual conduct of the recitation command and suggestion have a very important place, they do not approach in effectiveness the question. The question is to the teacher what the chisel is to the sculptor, what the brush is to the artist—his most important instrument. Every artist can tell just why he uses the color he does use, every sculptor knows just what he wishes to accomplish by every chip he cuts from the marble, but few teachers can tell just why they use the questions they do use, or can show any relation of the questions they use to the end they wish to accomplish. Surely teaching can not be artistic unless the teacher is an adept in the use of questions. The lawyer is the only other person to whom questioning is as important as it is to the teacher. In getting testimony before the court, in attempting to break down testimony already introduced, the lawyer relies upon the question almost exclusively. But while the lawyer uses the question (presumably?) for the purpose of finding out the truth as the witness saw it, the teacher, in addition to this use, uses it as an instrument to lead the child to discover truth for himself.

The fundamental purpose of the question is to lead the child to think for himself. The teacher has a purpose in mind in asking the question, a motive or aim. Inevitably the question, as a series of related words expressive of associated ideas, has a form. And, finally, the question provokes some kind of thinking on the part of the pupils. The following classification of questions, while pretending only to helpfulness and not

to completeness, and not meaning to exclude other helpful ways of considering the subject, is based upon an analysis of questions actually used in classes, and also shows the close interrelation of the classification made.

QUESTIONS.¹

1. On the basis of their form:—
 - (a) Direct and indirect.
 - (b) Leading.
 - (c) Elliptical.
 - (d) Alternative.
2. The teacher's purpose in asking the question:—
 - (a) Testing.
 - (b) Pivotal and developing.
 - (c) Clarifying, mystifying.
 - (d) Guiding—sign-board.
3. The kind of thinking demanded by them:—
 - (a) Natural.
 - (x) Contiguity.
 - (y) Similarity.
 - (b) Causal.
 - (c) Logical.

1. On the basis of form.

(a) Take such questions as these: *Can the snake crawl? Does your father work in the shoe factory? Did you tell your mother about it? Was Washington the first president of our country? Would you like to know how new varieties of potatoes are secured?* Such questions are very common in our schoolrooms and have a common characteristic—they can be answered by *yes* or *no*. Such questions are called *direct* questions, for the reason just given. In some cases there is a doubt in the child's mind as to the answer desired. In such cases he can surely get the right answer by two guesses.

¹ See Landon's *The Art of Questioning*; De Garmo's *Interest and Education*, pp. 179-204; Hinsdale's *Art of Study*, pp. 97-100, for other treatments of this subject.

It is, however, an easy matter to state the pedagogical objections to such questions. First, they offer an inducement to guessing; second, the children soon become skillful in knowing, from the teacher's voice and attitude, the answer desired, so that practically the teacher does all the thinking and the pupils agree with him; third, they require from the child a response which is too brief and too limited to be properly educative; fourth, as a consequence of the above, they are often destructive of interest.

The only defenses of this form of questioning are: the teacher uses the direct question in order to progress rapidly over what the children already know so that the new may be the sooner reached (but this ignores the value of the child's expression of what he knows); the teacher uses the direct question to get the child to take a position about which it is desired to question him later. To illustrate the last case: "Could you now be elected to the United States Senate?" "No." "Why?" "The Constitution provides, etc." The thing desired is to find if the pupil knows the provision of the Constitution regarding the qualifications of those who may be elected senators. To achieve this end, the following questions seem better suited. "Why could you not become a member of the senate?" "What would prevent your election to the senate?" It may be objected that the child does not know the facts implied in these questions. If this be true, no matter what form of question be used, the facts must be taught before further progress is made; hence, in such a case, nothing is lost by the latter form of questioning.

In opposition to the direct question, we have the indirect—one which can not be answered by *yes* or *no*, but which requires for its answer the formation of a judgment. Taking for illustration the questions already given, we can easily put them into the indirect form.

"How does the snake get from one place to another?"

"Where does your father work?"

"What did you tell your mother about this matter?"

"What did your mother say when you told her about it?"

"Who was the first president of our country?"

"How are new varieties of potatoes secured?"

These indirect questions require the pupil to form a judgment, and, if the formation of complete sentences be insisted upon, lead, also, to habits of complete language expression. Of course, the pupil may not be able to answer these questions, which merely indicates that he does not know, but it does not show that the form of the question is at fault. Certain of the indirect questions which demand the literal reproduction of the book, may be called textbook questions; for example:—The geography says, "The interior of the earth is in a state of igneous fusion." The teacher may ask, "In what condition is the interior of the earth?" The form of the question is not open to objection, but when it is seen that questions in this form demand of the child a reproduction of words contiguously associated, and that this contiguous association (verbal) may not have the desired ideas back of it, the real basis of objection to the habitual use of such questions becomes apparent. And this reasoning may easily be extended to condemn the habitual use of map questions, questions at the bottom of the history page, the catechism and all its blood relatives, as well as set questions on the text made out and used year after year by high school, normal school, college, or university teachers. The dangers of verbalism are reduced, but not wholly absent, in schools above the elementary grades. The indirect question, therefore, from the standpoint of its form, is a desirable question.

(b) The outline excludes the leading question from both the direct and indirect forms for the reason that the leading question suggests by its form the answer desired. For illustration:—"You get my point, don't you?" "Then we are in substantial agreement, aren't we?" "You had never realized this before, had you?" In courts of law the leading question is tabooed because its free use practically amounts to the lawyer's testifying. It

should be ruled out of the schoolroom for a similar reason, viz., it signifies that the teacher, not the pupil, does the greater part of the thinking.¹

(c) The question may, however, take the elliptical form, leaving merely a word or a phrase to be supplied by the children. For example:—"Three sevens are —?" "After leaving Boston Washington started for —?" The children, either singly or in concert, reply with a single word or phrase, making a sort of solo and chorus effect, or a duet by teacher and pupils. In class reviews and concert drills this form of question is often very useful, but its utility is practically exhausted in the uses mentioned. The chief objections to it are that it provokes too small a reaction on the part of the child for the maximum educative effect, and that it tests contiguous association chiefly.

(d) Closely allied with the elliptical question is that form of question known as the alternative question, one which allows a choice between alternatives presented in the question. For example:—"Is *able* an adjective or an adverb?" "Does the predicate of this sentence add an idea to the subject, or merely unfold what is already in the subject?" "Does the Amazon River flow east or west?" "Will Clark go from Kaskaskia to Vincennes or back to Virginia?" The psychological objection to such questions is that they limit the associative processes to the conditions specified in the questions themselves, and this limitation, while it decreases the chances of error, minimizes the educative effect of the possible associations. If questions are used for the purpose of finding out what the child knows, the alternative question is not so effective as other forms of the indirect question. If, on the contrary, the purpose be to teach the child a new thing (except in cases of logical or causal necessity, as "Does the revolution of the earth around the sun, or the inclination of the earth's axis to the plane of its orbit, cause the changes of seasons?) some other form of question is preferable. To

¹ It is strange how unconsciously the teacher can get into the habitual use of the leading question.

illustrate the last point:—You wish the child to learn where Clark will go from Kaskaskia. Ask these questions: “Who are the people Clark wishes to capture?” “If there are any of these people in this part of the country, where will they be found?” “When Clark knows that his enemies are at Vincennes, what will he do?” Or, the end may be reached another way. Tell the children that Clark learned from a French friend that Hamilton had only about eighty men at Vincennes, and then ask what Clark will decide to do.

It is not contended that the alternative form of question may not have high utility if skillfully used, but rather that few teachers have the skill to use it effectively; and, further, that its effectiveness may in almost all cases be realized through the use of some other forms of the indirect question. And, finally, unless the alternative question be skillfully used, there is danger that it will become, practically, a leading question or will encourage guessing by the children.

Summing up, we see that (1) direct and leading questions are to be avoided because they guide the child too much, do his thinking for him, or call forth too brief a response; (2) the elliptical and alternative questions have a very limited use for testing and for teaching purposes; (3) the indirect question is usually the most effective one for the teacher to use.

2. On the basis of the teacher's purpose.

The conclusions just stated have implied that the real ground of objection to the form of questions is found outside their form. The teacher should use the question as a tool or instrument, that is, he should have a definite purpose in mind to be achieved through the use of the question. Taking all possible questions, they may be classified on the basis of the teacher's purpose in asking them.

(a) One great use of the question is to find out what the child knows; or, more technically, what the child is at any time. This is a legitimate purpose, but can never be the whole purpose of the teacher. Suppose the children have been developing the

story of *Robinson Crusoe*. Before they go on with the new lesson, it is advantageous to have them reproduce what has been previously constructed so that they may the better understand the new. Or, take a history class in a University. The weekly papers or reports, the hour, mid-year, and final examinations are only so many tests of what knowledge the pupil has made his own. If our view as to the importance of reactive behavior is correct, the testing of the child's knowledge has a beneficent influence and is a learner's right. But, granting the utility of the testing question, what form should it assume? Evidently the more complete reaction is the more educative; hence, the direct, elliptical and alternative questions have little value as testing questions, because they do not require that the pupil originate the judgment which is necessary to their answer. The leading question, which does not demand any thinking by the child, is excluded entirely. This throws the teacher back upon the indirect question for testing purposes, but the so-called textbook question is to be avoided.

(b) The teacher frequently uses the question, however, as an instrument for organizing the child's self in new directions, for teaching something new. The question used for this purpose is called the *developing* question. Most young teachers, when they leave off asking book questions, think they are developing if only they ask questions which can not be answered in the words of the book; and they usually overwork the direct question. It is evident that the direct and leading questions are not advantageous. It is clear, also, that the elliptical and alternative questions have only a relatively small value for the purpose of developing a new thought in the child's mind. The indirect form is the one of greatest value, because the child in answering it must put a subject and predicate together for himself.

Indirect, however, does not mean indefinite. The greatest difficulty experienced by young teachers in forming questions is just this difficulty of getting indirect questions that are also definite enough for developing purposes. The source of this

difficulty lies in the fact that the teacher either overestimates the knowledge of the pupil or else does not look at the subject from the child's point of view.

This difficulty may be illustrated:—Suppose a fourth grade class is studying about Daniel Boone's escape from the Indians. The teacher asks the following questions:—"Why does Boone desire to escape from the Indians?" "When will he plan to escape?" "In what direction will he probably go?" "How will he get across the Ohio River?" The trouble is that some of these questions are too indefinite, and not that they have the wrong form. From such a development, however, the pupils could give only a mediocre reproduction. Note the effect of recalling past experiences and giving facts as bases for reasoning:—

I. How has Boone felt about his family and friends since he has been with the Indians? What had the Indians forced Boone to do for them? How has he felt about his treatment by the Indians? Tell why Boone desires to get away from the Indians.

II. When Boone went hunting alone what did he do with the bullets? Why? If you were in Boone's place, what plans would you make to get away? At what time of the year would you start and why? Tell what plans Boone made to get away from the Indians.

III. Boone has escaped now. To what place does he wish to go? Walk in the direction Boone traveled. What will the Indians do when Boone does not return to them at nightfall? How will Boone plan to throw the Indians off his trail? (Tell some of the things he did if the pupils do not contribute them.) Tell what Boone did when he got away from the Indians.

IV. If Boone continues on his journey to what river will he come? How will he get across this river? (Swim. He can't. Make a raft. He hasn't any logs or an axe. Suppose he had an axe, why would he not wish to chop with it? Hunt for a boat.) Tell what difficulties Boone had in crossing the Ohio river.

V. Now tell:—(1) Why did Boone want to get away from the Indians. (2) What plans Boone made for his escape. (3) What Boone did to get away from the Indians. (4) What difficulties Boone had in getting across the Ohio River.

The difference between the two treatments is that the second secures more definite thinking because of the emphasis it places upon past related experiences, and because it always—even by telling, if necessary—supplies the basis of necessary facts. One teacher conceives the questions as following closely the chronological sequence of Boone's activity; the other conceives them as steps in the development of the children's images—steps which are not limited by the chronological sequence. The four questions given under V. are pivotal questions—questions which determine the order of procedure and have clustering about them other questions whose answers are necessary to the answers of the four. The treatment shows that each pivotal question follows after a cluster of others which lead up to it. These pivotal questions the teacher should conceive clearly, and then ask the questions which develop the answers to them. The difference may also be expressed by saying that one teacher conceives the subject matter as homogeneous while the other conceives it as made up of organically related parts. Practice with children and thorough mastery of the subject matter are necessary to skill in the use of questions of this kind.

The pivotal question is the one for the teacher to seize upon in preparation for teaching the new. The developing questions have to be adapted to the past related experiences and to the responses of the children in the class, and so can not well be made out fully in advance. Wandering from the subject, frequent in so-called developing work, is largely due to the fact that the teacher does not conceive the subject as made up of organically related pivotal parts, hanging firmly together and having a definite sequence, and to the inability of the teacher to use the child's past related experiences for developing purposes. There are thus two things essential to all successful oral teaching, viz.,

(1) a clear and firm grasping of the new in its organic or pivotal aspects; (2) a process of successively developing these aspects by supplying knowledge and by the use of questions which, based upon the past experiences of the children, lead them to construct, or create, the new. Properly to grasp the new in its organic aspects, requires such a knowledge and mastery of the subject that text-books are not needed, and a sympathetic appreciation of the child's attitude toward the subject.

Over and beyond these things there is an indefinable sort of common sense, logical ability, sense of fitness, resourcefulness, tact, intuition—call it what you will—a something that brings the teacher into an appreciative divination of the suitable and effective arrangement of the subject matter. This latter element is largely an unconscious affair, and seems to depend upon one's general ability and resourcefulness rather than upon any special knowledge which one has gained. The leading of the child to this view of the subject by questioning is almost a fine art in itself. For the highest success in this development work, the teacher needs to know his pupils thoroughly—their home life, their games, the things they enjoy most, their ways of estimating things, their schoolroom life—in short, the teacher needs to know the possible interpretative attitudes of the child. This knowledge of the individual pupil is neither statistical nor static. And, finally, the teacher must, by critical experience, become skillful in utilizing the most effective of the possible interpretative attitudes of the child. But since children differ widely in this respect, he must conduct his development in such a way that each pupil in the class constructs the new for himself.

(c) Despite the efforts of the teacher, it is highly probable that some pupil in the class will not be quite clear about the new thing. In such cases the teacher uses questions to clarify the pupil's knowledge. Such questions may clarify or mystify the child's thought. The result will depend upon the relation of the question to the child's previous experiences. In order to clarify, the teacher should see just what is clouded. To illustrate:—A

psychology pupil one day said that she could not understand the experimental proof¹ that the occipital lobe is the centre for vision. Questioning revealed that "galvanizing the cortex" was the cloud. The girl had lived in a town in which iron is galvanized. Electrical stimulation of the cortex was explained, and Galvani's experiment was described. Ninety-four others in the same class had given the correct meaning to the phrase in question, but this girl had heard only of Voltaic electricity in her high school work in physics. It is thus possible for a teacher in trying to develop a point to use a term which mystifies a pupil. And so in efforts to clarify the teacher should first find the cause of the shadow; and use, for this purpose, the clarifying question. This illustration shows how teaching a subject clarifies one's ideas about it, for in teaching it, he is forced to see it from the unclouded side in order to present it to others.

(d) Closely allied with the clarifying question is the guiding question, the sign-board question. A teacher once asked for an illustration of this kind of question, and in reply was asked, What is a sign-board? He reflected and replied, "A sign-board tells the way to a given destination." And what is the purpose of a sign-board question? "The purpose of a sign-board question is to show the pupil how to reach the end desired." These questions guided the teacher into the right thought and appreciation of questions of this class. The guiding question gives a hint as to the location of the answer, but does not give the answer. In directing seat work the teacher often needs to use questions of this kind. Some teachers feel that these questions have exactly the same purpose as the clarifying questions. With such there can be no quarrel, for the teacher's purpose determines to which one of the classes here specified it really belongs. Again let it be stated that this analysis of the question on the basis of the teacher's purpose is designed to be helpful rather than scientifically exhaustive.

Summing up:—

¹Given in James' *Briefer Course*, p. 110.

I. The question may be used by the teacher:—(a) to test the pupil's knowledge, or the present organization of self; (b) to lead the child to the construction of new knowledge, or to a desired organization of self; (c) to clarify the child's ideas; or (d) to guide the child into the desired way of thinking so that he may help himself.

II. All these purposes are legitimate ones, and testing and developing are complementary phases of the teaching process; hence, neither should displace the other in the teacher's estimation or practice.

III. The indirect form of the question is generally the most efficient in the realization of the legitimate purposes of the teacher.

IV. Efficient use of questions demands that:—(a) the teacher know and utilize the most effective of the child's possible interpretative attitudes; (b) the teacher know the subject matter in its organic aspects; (c) the teacher's questions shall lead the child to the free grasping of the organic aspects of the subject.

3. On the basis of the kind of thinking demanded to answer the questions.

One must not overlook the child's mind in this analysis, for after all, the conclusions already reached, as to the form of questions and the teacher's purpose in using them, are subject to revision or even rejection if they are inconsistent with the educative activity of the child's mind. In fact, these analyses have been made with the idea of maximizing the teacher's teaching effectiveness, or, in equivalent language, maximizing the child's learning, for effectiveness of teaching can have no meaning apart from increased and improved learning. In the following discussion of questions on the basis of the thought-sequence demanded of the pupil by them, the discussion will keep within well-defined and well-known psychological laws. Trivial questions will not be treated here, for it is now assumed that the questions propounded have the best form for the realization of the teacher's purpose.

The child's thinking activity will be stimulated in different ways by the various questions asked him. His thought may follow the so-called natural laws of association, contiguity and similarity, or it may follow a causal sequence, or a logical sequence. These will now be examined in detail.

(a) *NATURAL THINKING.*

Suppose a child has learned about Boone's escape from the Indians, and that the questions already given (see p.159) are asked:—What sort of thinking must the child perform in order to answer those questions? Notice that the facts have been given in a continuous series; if he has grasped them at all they lie in his mind in a connected series in the same order in which they were given. In the development of those points, thinking by similarity and causal connection was prominent; under the stimulus of these questions the child re-thinks his connected series of thoughts. This cannot be described wholly as association by contiguity. Of course, it is remembered experience, and the order of ideas depends largely upon temporal contiguity. Contrast this reproduction with that of trying to remember the words of a book or the words of a poem. There is a difference due to the richer context of remembered experience in the former case.

But suppose that the preparation for the study of the tables of English money is being carried on:—the following questions might be asked:—Who of you have seen a piece of English money? Describe it. To whom did this money belong? How many of you have relatives who used to live in England? In such questions as these the association, or memory, is chiefly contiguous. The question, Where have you seen Shepherd's-purse growing? demands memory of spatial contiguity. In general, all testing questions tend to take this form. They may, however, be in some other form and the most effective ones usually are. The real question is, How does the child think in response to questions demanding contiguity? In the first place,

such questions demand that the child recall his past experiences. In the second place, this contiguous past experience has very little meaning which depends to any considerable extent upon the fact of its contiguity. Time and space are very fundamental and primitive ideas upon which, as beads on a string, past experiences are strung, but re-thinking things by contiguity in time and space series is not very educative. In fact, psychologists hold¹ that those minds in which contiguous thinking predominates are proverbially dull and prosaic.

The time-worn topic for school compositions, "What I saw as I came to school and what it was doing," soon loses its charm for children chiefly because it demands mere contiguity, with the context and chief elements of meaning omitted. A colored boy expressed this contempt in his composition, which was:—"I never saw nothin'. It wasn't doing anythin'." Much of the indifference of boys to grammatical definitions and rules is due to the fact that these things have nothing but the elements of contiguity in them for the boys. So, also, tables of weights and measures are often of little interest to girls. That is, mere symbols, if remembered at all, must be associated by contiguity. Rhythm is of great value in such cases, and many persons remember that "singing the capitals" and singing "the multiplication tables" relieved the tedium of many an otherwise weary hour. It has been noted, too, that children in reading things too difficult for them use the sing-song as an aid, and no doubt, in some cases, the swaying of the body is a source of real pleasure to children. Therefore, when the teacher's questions demand association by contiguity, the children lose interest, and the instruction becomes wooden and lifeless. This is why textbook memorizing is so dull, lifeless, and soul destroying.

The fundamental truth is that the contiguity series as such has the minimum of meaning for the child. In reply to this, it may be urged, as it has been urged in the past, that since children soon get control of contiguity series, and since they like to

¹James' *Talks to Teachers*, p. 81.

do what they can do well, children like to repeat the contiguity series they have learned to control. This is the proverbial testimony of *schoolmasters* as opposed to school teachers. The masters insist that children love to decline Latin nouns whose meanings they do not at all comprehend. Boys have been known to band together to build tree-houses, boats, or telephone systems during vacation, but not to study Latin or even English grammar. One class of things appeals to the expanding life-interests of the child while the other does not, and consequently the former class of things is sought after by the child.

The original answer to this position is true, however, within certain limitations. Young children love jingles and connected series and do derive pleasure from their mere repetition. This seems to be Nature's way of unconsciously building up habit and skill in the child. All must admit the danger of barrenness in habitual routine, and must be willing, therefore, to avoid that extreme use of contiguity which tends to the form of parrot-like, mechanical reproduction.

There is one exception to this position which should be stated frankly. Certain symbols and combinations of symbols should become so thoroughly habitual that the context of remembered experience sinks to the minimum. The facts of addition, subtraction, multiplication, the squares and cubes of certain numbers, aliquot parts, the spelling of certain (not all) words should drop all intermediary steps and move rapidly, accurately, and mechanically through the series.

Meaning and significance begin to appear when, in spite of the space and time relations of things, the child begins to connect them together because of aspects of internal identity. This implies reproduction, discrimination, comparison, judgment, even reasoning in its primitive forms. It is thus evident that thinking by similarity means more significant self-activity than is implied in contiguity. In contiguity one is limited to things as they have actually occurred; in similarity the mind begins to build up a world for itself. The fact that a certain minimum

of contiguity is the necessary basis for similarity should not be overlooked. Let us suppose that there are two contiguity series:

a, b, c, d, e, etc., and

a', b', c', d', e', etc., in which the elements are alike in some respects. According to contiguity *a* has only one associate, *b*; by similarity, *a* may suggest *a'*, and then by contiguity, *b'*, and *b'*, by similarity, may suggest *b*. Similarity, combined as it always is with contiguity, renders one's past experiences flexible, and flexibility means serviceableness for the mind's own ends. The ideal element in thinking first appears in thinking by similarity.

This analysis of thinking by similarity should convince teachers of the desirability of stimulating and encouraging it in children, and should also make it evident that thinking by similarity can not be secured by the use of certain devices well known to them. The textbook with questions at the bottom of the page leads the child to thinking by contiguity. So, too, the "textbook question"—the one that demands the reproduction of the words of the book—demands very little beyond bare contiguity. Of course, pupils may do some thinking by similarity even in the cases cited above; but they do it in spite of the influence of the teacher and not because of it. The teacher should lead the child to think by similarity and the so-called "higher forms of thinking."

The question at issue, then, is simply this:—How may the teacher stimulate the pupil to thinking by similarity?

(1) All oral preparation for a lesson about to be assigned consists in calling up in the pupil's mind certain ideas in terms of which the new ideas may be interpreted. This process prepares the pupil for thinking by similarity as he studies. If this assignment includes some parts of the new, the teacher can note the extent to which his pupils actually utilize similarity. This is simply a restatement of the principle of apperception, a principle valid for ideas but not for words.

(2) The questioning in the class should be of such a character as to demand thinking by similarity. Class questions should lead pupils to form new associations on the basis of likeness to what is already known. In the recitation, what the child has learned should be organized, and organization of knowledge is impossible without a basis of similarity. Thinking by similarity may also be stimulated by having pupils freely illustrate, whenever possible, and by means of their own personal experiences, the things they have learned.

(3) Comparison is essentially a process of thinking by similarity, for, after all, it is only one phase of appreciation. After two similar things have been compared, each is interpreted in light of its essential aspects, and both are tied together by the discovered bonds of similarity. Therefore, the teacher who makes a large and wise use of comparison is stimulating the pupils to think by similarity.

(4) In a broad way, the teacher who has constantly in mind the ideal of stimulating the self-activity of the child will inevitably rise above the demands of contiguity. The activity of the mind in contiguous thinking lacks that freedom which is characteristic of any worthy self-activity. In short, a teacher who regards the end of education as *formation* rather than *information* will almost unconsciously tend away from contiguity and toward similarity.

(b) CAUSAL THINKING

Things cohere; they are tied together in various ways. If any one fact A is always followed by a related fact B, A is said to be the cause of B and B is the effect of A. Invariable sequence is one aspect of causal connection. But invariable sequence is almost exclusively a matter of both spatial and temporal sequence. Hence, contiguity is a basis without which causal thinking could not exist. Causal connection also has a basis in similarity for we think of the effect as being, in a way, identical with the cause; the effect is the cause in another garb. To illus-

trate:—The tension in the spring of a watch is the cause of its running; its running is just this tension in another form. One's motion in winding a watch causes a tension in the spring. The tension in the spring is simply this motion in another form. The sound made by the watch, the movement of the wheels and hands, the heat developed by the friction, etc., are simply so many forms or effects of one's motions in winding the watch. Any causal fact has this peculiarity—it is tied to the whole system of things, past, present, and future. And by tracing out these manifold connections one comes to apprehend the causal fact more accurately and definitely.

Thus far mention has been made of natural causation, a causal series tied-in with the objective world. There is also a realm of subjective causation, a causal series tied-in with human motives. One asks a friend, "Why did you go to the peach country last summer?" and the reply is, "I went because I wished to know the details of peach raising and because I thought it would be great fun to loaf in such a busy land." Here the cause, or reason, for a given human act is expressed in terms of human motive. The motive bears the same relation to the action that the winding of a watch bears to the tension of the spring—it is the *that-without-which* the going to the peach country would not have occurred as truly as the winding of the watch is the *that-without-which* there would be no tension in the spring. It must be frankly admitted, however, that the connection of this subjective causal fact to the whole realm of one's motives is not as clear as is the connection of a given objective causal fact to the whole system of force and matter.

There are, then, two kinds of causal connection, viz., objective casual series and subjective causal series.¹ Nature study and science deal with objective facts and objective causal relations, while all studies that relate to man deal with subjective facts, subjective causal series, and their realization in objective forms.

¹ Ultimately, both are subjective for there is no objective causal series for one except as he thinks it. This metaphysical view, however, is not essential to the discussion here to be taken up.

A further distinction must be noted. The effect which invariably follows the motive is a visible tangible thing. One's going to the peach country is a thing actually occurring in space and time and, therefore, as truly open to the observation of others as is the running of a watch. The cause of one's going is an invisible something, a motive which no microscope would reveal as either a dynamic or static brain condition, although there was undoubtedly a brain process connected therewith. The tension in the watch spring can not be seen either, for all force is invisible.

The above discussion should make it clear (1) that the effect, or result, is concrete, and (2) that cause is abstract. Or, to state it differently, cause, genetically considered, is an inference from sense-contact experience. Therefore, in the process of his development, the child apprehends effects before he comprehends causes. The child's questions show this. "Why does the dog bark?" "What makes the car go?" "Why did you do that?" All such questions show that the child is seeking the invisible, intangible cause which he believes lies back of the visible, tangible world of his sense-experience. Adults desire the same kind of evidence. People wish to see the X-Ray machine, the experiments with liquid air, the mechanism of wireless telegraphy in order that their ideas of these forces may be made definite and clear. In other words, so that inference may rest upon sense-contact experience.

On the basis of his experiences the child's notions of how certain objects affect him become definite and interesting. Especially with respect to objects that are conceived by the child as possibly sources of harm, he asks, "What will it do to me?" "What will it do to you?" In all such cases the child is seeking to learn in advance of actual experience the effects one should look for as a result of contact with certain things.

It is evident, from what has thus far been set forth, that the child is fitted to think from effect to cause before he is fitted to think from cause to effect. This fact is of significance to

teachers. The nature study work in the first grades should be observational and inferential rather than experimental. The child should be led to an *appreciation of causes through their effects*, and not to an appreciation of effects through their causes. Again, the first study of subjects that deal with human motives should proceed from actions to motives. Power to interpret history in its causal relations can be built up only on the basis of inferential interpretation of human actions into equivalent motives. So, too, geography taught by the physiographic ideal and method demands that children think prevailingly from cause to effect instead of from effect to cause.

In striving to induce causal thinking in pupils the teacher should distinguish the two kinds noted in the last paragraph. If one is striving to secure thinking from effect to cause, he should ask, "Why is it so?" or "Why did Grant march toward Jackson rather than toward Vicksburg?" The whole matter is really very simple. The pupils have already observed or know a given fact that has an antecedent cause. A question that leads the pupil's mind to connect this fact or result with its cause is all that is needed; and such a question is a simple indirect question with a *why* in it.

If, however, one wishes the pupil to think from cause to effect, there must be (1) a clear grasping of the force or motive, and (2) a question that leads the pupil imaginatively to project this force into its probable effects. "What will Pemberton do when he learns that Grant is marching toward Vicksburg?" "What will be the effect on a pasture of a large number of sheep grazing there?" "What will be the effect of allowing the water to freeze in the rock crevices?" All these questions are of this type, "What will be the effect of this cause?"

Having now seen the essential nature of causal thinking and the character of the questions that stimulate pupils to it, a few considerations as to the broader aspects of causal thinking as related to the work of the elementary school will be offered.

(1) Exclusive memory work tends to destroy causal think-

ing and yet memory is the necessary basis of causal thinking. The paradox is easily resolved.

(a) If we have correctly analyzed causal thinking, it rests, in part, upon a recognition of invariable sequence; and this invariable sequence is possible only as sequences are remembered as invariable. One must remember the content of his experiences rather than their form to have the right basis for causal thinking. And, hence, memory is the necessary basis of causal thinking.

(b) Memory work, however, centres attention upon the form of an experience rather than upon its content. This leads to a satisfaction with "what the book says," or with "what the teacher says." All this satisfaction with things as they are, accepting them as simple, ultimate facts, is directly opposed to that dissatisfaction which forever seeks to comprehend the causal antecedents and the causal consequents of any given fact.

(2) Causal thinking may be stimulated by arousing the pupil's curiosity. Teachers frequently seem so anxious for their pupils to know that they hasten to tell them all or to refer them to books wherein they may find everything needful. The gap between the desire to know and the actual knowing may safely be widened provided the pupil is constantly alert and active in his effort to find out. This throwing of the burden of finding out for himself back upon the pupil, if done with discretion, increases his interest and stimulates his curiosity. Curiosity is an active going out after something, and, of course, may relate to things that are causally connected. If one is curious as to how the colon (:) came to be used as a sign of an indicated ratio, he may indeed find out, but will probably not find out *why* it was done. In all arbitrary conventional things there is no *why*; there is only *fact*; simply the fact that it is thus and so. But one may also arouse the child's curiosity regarding things or facts that have causal connections, as, for example, "Why was Grant anxious to get his army below Vicksburg?" "Why is loam more fertile than sand?" "Why does a melted fragment

of lead assume a spherical form as it falls from the top of a shot-tower?" If by such questions the teacher can arouse the pupil's curiosity and thus get him to find the cause, he renders the pupil a genuine service.

(3) Also, if one can induce him to suspend his judgment until his observations take on the feeling of certitude, the child will be stimulated to causal thinking. But besides influencing the child to suspend his judgment, the teacher should also influence him to make it. It is said that "a liar needs a good memory"; and so does the teacher, but for a very different reason. If a pupil is assigned a problem to think out, the teacher should not forget to give him an opportunity to report upon it. In short, the teacher should endeavor, both by getting the child to suspend his judgment and also by getting him to keep at it until he finally makes it, to influence the child to causal thinking.

(4) In this matter of stimulating causal thinking the teacher may become efficient by organizing and presenting his subjects according to the principle of causal connection. This causal organization is not an easy task. The chief difficulties are:—(1) an inability on the part of the teacher to see these causal connections, and (2) an inability to organize a subject or topic according to them after they have been seen. The first is simply lack of power—due, in most cases, to the way one has been taught; the second is the lack of skill, due to an absence of independence in thinking. Teachers are too dependent upon the order in which things are found in books or in which they have been learned. Even when pupils study a textbook, the recitation should largely be a reorganization of the materials studied in order that the pupils may more permanently assimilate the material studied by seeing it in other relations. The simple repetition of things as they have been learned is usually incompatible with causal thinking.

(5) Further than this:—The teacher should believe that nothing is really learned until it is known in its causal connections. This does not mean that the whole universe of things

should be taught in every lesson; but it does mean that the teacher shall so teach that his pupils do not think they know all there is to be known about a thing when they have learned a few things about it. Every new thing learned should open up a world of things to be known. Knowledge should always be an incentive to further knowledge, and the teacher should so condition the pupil who is learning that by and through his act of learning the thirst for knowledge is intensified. This can never be done, however, when the thing learned is an arbitrary or conventionalized one. If one knows how to spell *cat*, he knows all there is to know about spelling it; but when he knows that corn "tassels out" he is just ready to begin to know about corn.

(c) LOGICAL THINKING.

Turning now to the last division of the analysis, logical thinking and the ways by which it can be stimulated remain for consideration.

The word *logical* gets into one's vocabulary early in life, and he has a feeling of its meaning long before he can, with any degree of precision, define, even to himself, its meaning. There is a *why* or a *because* in logical thinking, and thus it is identified with causal thinking. Logical thinking is thinking by "necessary sequence". *Necessary* means that it could not be otherwise; in the nature of things this thing *must* be as it is. Whenever the invariable sequence of causal thinking is regarded as necessary, it becomes logical thinking. Take a classic illustration of the books on logic:—

All men are mortal.

Socrates was a man.

Therefore, Socrates was mortal.

Granting the truth of the first two propositions, the third is *necessarily* true, for by being a man Socrates becomes subject to that which is predicated of all men, viz., mortality. Take another illustration:—

All cows have horns.

This animal whose side and legs I see is a cow.

Therefore, this animal has horns.

The first proposition asserts that all cows have horns; the second that this animal is a cow. Then, necessarily, this animal has horns. Of course we know that some cows do not have horns; but, assuming the truth of the first proposition (and this we always do in logical thinking) this animal *must* have horns by virtue of its (if one may coin a word) *cowness*.

If in causal thinking one works from a general proposition which is assumed to be true, and examines a particular fact which comes under that law, he employs logical thinking. To illustrate:—

All metals expand with heat.

Lead is a metal.

Therefore, lead expands with heat.

From what has been said already it is evident that, granting the truth of the propositions given, logical thinking allows one to enter (or forces one to enter) into the heart of things, allows one to find the genuine law of things by virtue of which they are what they are. One school of thinkers maintains that by logical thinking we come to know the inner nature or essence of things. Another school maintains that by logical thinking we unfold the necessary relationships between judgments, and thus find the laws underlying human ways of thinking. Whether this “nature of things” is outside of the mind or within it need not disturb the teacher, for his task is to guide and stimulate logical thinking in the pupils, and this process is the same in either case.

Looked at from another point of view, logical thinking simply renders explicit what is implicit in perception and in judgment. One recognizes an object as a lead pencil. How does he know it is a lead pencil? Simply by the following series of propositions:—

1. All cylindrical, wooden objects having at their centres a substance that makes marks upon paper are lead pencils.

2. This is a cylindrical, wooden object having at its centre a substance that makes marks upon paper.

3. Therefore, this object is a lead pencil.

It is not urged that one consciously goes through this process every time he perceives a pencil, but one's logical thinking simply makes explicit, or evident, what was before implicit, or hidden in his perception.

Take this judgment, "The man went to town," and see how the logical thinking is implicit in it.

1. The performance of a series of acts, x, y, z , etc., is called going to town.

2. The man performed the series of acts, x, y, z , etc.

3. Therefore the man went to town.¹

The subjects in the elementary school course that afford the best opportunity for training in logical thinking will now be considered.

(1) When one, in dealing with number, gets beyond the mere minimum of the so-called "number facts" of addition, subtraction, multiplication, and division, he finds the problem. A problem consists of two parts:—(1) a series of given relationships; and (2) a required relationship (or relationships) to be discovered. In the mathematical problem, the relationships to be discovered bear certain necessary relations to the given facts or relationships, and hence, logical thinking is required in the solution of all mathematical problems. The "example," however, is merely an indication of certain operations to be performed. To solve a problem, therefore, is to change it into an example by discovering the necessary relationships of the parts given to the parts required. Take, for illustration, a very simple problem:—

"Sarah sold three dozen pears at twelve cents a dozen, and with the proceeds bought calico at six cents a yard; how many yards did she buy?"

¹A fuller discussion of the nature of this process and a graphic method of illustrating the necessary relationships is given in Chapter XII.

Solutions:

A. 1. One dozen pears sell for twelve cents.

2. Three dozen pears sell for three times as many cents as one dozen.

Therefore, three dozen pears sell for three twelves of cents, or thirty-six cents.

B. 1. At one cent a yard, thirty-six cents will buy thirty-six yards of calico.

2. At six cents a yard, one-sixth as many yards of calico can be bought as at one cent a yard.

Therefore, at six cents a yard, one-sixth of thirty-six yards of calico, or six yards of calico, can be bought for thirty-six cents.

Of course this problem can be solved in other ways.

Here is one:—

1. One dozen pears buy two yards of calico according to the conditions given.

2. Three dozen pears buy three times as many yards of calico as one dozen pears buy.

Therefore, three dozen pears buy three times two yards of calico, or six yards.

The solutions given illustrate the way in which logical thinking is involved in the solution of problems. This logical thinking is very different from the kind of thinking required in mastering number facts and processes. The genuine value of arithmetical study consists in the development of the power to think logically. To know how to add, subtract, multiply, etc., is of no value except as it is connected with the knowledge of *when*, *where*, and *why* these processes are performed. And the power to think logically comes out of a perception of the connection between the relationships given and the relationships required. If this power arises out of the inventive activity of the pupil, it becomes serviceable in many situations in life. If, however, the power arises from an imitation of the "model analysis" it may take the form of a habit which has little flexibility under

conditions which are similar but not identical. This explains why "miscellaneous problems" cause pupils so much trouble.

The view here expressed as to the educative value of arithmetical study is based on the belief that the educative associative act is either one of purposed discovery or of invention. There is, it is true, a mechanical phase of arithmetic which must become habitual because of its serviceableness as a means in the solution of problems, but this mechanical phase should never be regarded as an end in itself, nor should teachers insist that pupils follow, absolutely, one set form of analysis. Rather, the teacher should stimulate the child to discover the necessary relations of the problem, to invent a way by which the required relations may be obtained. To do this successfully, the child must usually image the given conditions of the problem, and base his logical thinking on the image relations. Thus taught arithmetic becomes valuable, not only because of its serviceableness in many practical affairs of life, but also, because of the genuine power of attacking similar life-problems by breaking them up into their necessary relationships.

(2) Another study in the curriculum of the elementary school also demands logical thinking. English grammar is essentially a summary of the necessary relationships of words as used in sentences. By an examination of the functions of words in sentences, we find similarities. "Similarity of function" gives rise to the so-called "parts of speech." When a word in a sentence is examined, we classify it by its necessary relationships. For illustration:—In the sentence, "The early bird catches the worm," *early* is an adjective. Why? We imply the following syllogism in our answer:—

1. A word which describes a substantive is an adjective.
2. *Early* describes the substantive *bird*.
3. Therefore, *early* is an adjective.

The same kind of thinking is implied in what is called "grammatical analysis." We say of the sentence just given:—"This is a simple, declarative sentence of which *the early bird*

is the complete subject, etc.” In the portion of the analysis given there are implicit syllogisms by which we conclude that (1) this is a simple sentence, (2) this is a declarative sentence, and (3) this sentence has as its subject the phrase *the early bird*.

It was, perhaps, this character of necessary relationship in parsing and analysis that led men in the past to value grammar so highly as a study. The belief that language and grammar are one caused much discussion and also much dissatisfaction and wickedness on the part of pupils. The language one uses as a means of expressing his ideas to others is largely a matter of unconscious habit, and depends upon two things, viz., (1) unconscious imitation of the language of others, and (2) conscious imitation of others or of a rule. Our schools have come to recognize that effective language habits may be acquired by children without a study of grammar. Grammar is the science of effective language, of the related uniformities which underlie effective oral and written language.¹ These “related uniformities” may be defined or described in words, and thus there grows up a definite body of definitions, rules, and principles which is called grammar. Unfortunately, too, young pupils can commit these definitions, rules, and principles to memory, and even now and then catch a glimpse of what is meant by some of them. In consequence of these two facts, some teachers have assumed that the child in the fifth grade should begin to study grammar.² And if pupils could by this process come to appreciate the “true inwardness” of language, it would, despite their protests, be an excellent plan to follow.

More recently, however, many teachers have extended the term *language lessons*, so that many things formerly taught in grammar are now taught as language, and have restricted the term *grammar* to those related uniformities which underlie language. And, also, many teachers have been convinced that

¹ Effective means ready and accurate in expressing or conveying one's thoughts, and not necessarily in leading others to agree with the speaker or writer.

² Report of the Committee of Fifteen.

the only effective way of teaching grammar is the inductive method by which pupils are led to discover these related uniformities for themselves.

But, be the method one of induction or one of memory, as soon as the pupil begins to interpret the sentence before him, either by analyzing it or naming the parts of speech in it, his thinking (provided he be not guessing) is essentially logical thinking. And by means of this logical thinking, the pupil comes to appreciate the necessary functional aspects of the various elements of sentences; he acquires the power to get the thought of a sentence by a rapid analysis of it. This power of interpretation, and not the ability to define, is the great end to be gained by and through a study of grammar.

(3) Other studies of the school curriculum besides arithmetic and grammar afford occasional opportunities for logical thinking, but it is beside our present purpose to discuss them in detail, for the analyses already given will enable any teacher to detect such opportunities and to utilize them for the development of the child's power to think in terms of necessary relations.

Taking now a retrospective glance at this long section on the topic, "the nature and kinds of questions" (pp. 151—179), we may summarize it by saying that (1) one's effective teaching power depends upon his skill in questioning; (2) the teacher by means of questions should endeavor to lead the child to form new thoughts, for by this process alone does the mind grow and develop; (3) there are stages in the child's thinking which require a particular kind of questioning; and (4) effective questions are those which require the best thinking of which the child is capable.

§ 39. THE ASSIGNMENT OF WORK.¹

So far, however, only the teaching aspect of the recitation has been discussed. It is desirable that pupils develop the power to teach themselves, or the power to get ideas by an interpretation

¹Hinsdale's *Art of Study*, Chapter X, pp. 78-88, has a treatment of this topic.

of the symbolism of books. Pupils can gain this power only by doing the thing in question. And hence arises the practical question, What can be done by the teacher to develop in pupils the power of independent study?

It is by and through the assignment that the teacher can best stimulate this independent power. Primary pupils can do little in the way of independent study, and so teachers provide "busy work" consisting of drawing, matching colors, paper cutting, mat weaving, paper folding, etc. Pupils in the intermediate grades have greater power of independent study, and hence have assigned to them short "lessons," which are chiefly and generally repetitions of certain things they have already learned to do, such as learning to spell certain words, writing out compositions, performing examples in arithmetic, etc. Grammar grade pupils, however, have considerable power to interpret symbols into equivalent ideas and so have assigned to them definite lessons from which by study they are to get new ideas.

But what principles should control the assignment?

(a) The assignment should be something which the pupil by reasonable diligence can master in the available time. The difficulty in realizing this ideal is due to the fact that some pupils have greater ability than others and, hence, what can be accomplished by reasonably diligent application is a variable for any given class. To make the assignment according to the capacity of those with the greatest ability means half-mastery by the majority and their consequent loss of interest. To assign what the slowest pupils can master is to leave a majority in idleness and in a position to push somebody into temptation or be led into it themselves. To assign what the average child can master is to overcrowd the slow and underwork the bright ones. Individual assignment is usually an impracticable thing. The assignment, then, should be a minimum for all and some extra things for those who are able to accomplish them. This plan is not always feasible, but it seems to be, on the whole, the best plan for assigning lessons.

(b) The assignment should be such that the pupil knows what it is all about—there should be an aim toward the realization of which the pupil's study is directed. Very often, when teachers have not carefully assigned lessons, pupils fall into a meaningless, clock-like repetition of the words of the page; repetition, not thinking, is secured, and, consequently little is really learned. Constructive thinking in study, as in the recitation, is the only process by which the pupil learns. Aims, or ends, are the natural ways by which to arouse constructive thinking.

Again, the limits of the assignment should be clearly marked. This is only another way of saying what has been said in the preceding paragraph, for if aims are set up, they imply definite limits. Still, it is worth while to insist that the assignment be extremely definite. If page references are given, there should be no doubt about what pages are included. It is worth a child's while to learn how to use books, but this should not be included in the ordinary assignment of lessons. In the study period a pupil should spend his time in finding out certain definite things—not in merely looking for them.

(c) Moreover, if in the matter to be studied by pupils there are probable difficulties, the assignment should anticipate and prepare the pupils for them. It is always a loss of time and usually a loss of interest for pupils to encounter a difficulty which they are unable to master, especially in the study period. The resulting idleness has almost unlimited possibilities for disorder. Of course pupils should learn to face difficulties and master them, but in this, as in other things, tact and sense are needed. Besides, if by a few words at the time of assignment the teacher can so prepare the pupil that he is able to master the difficulty when he encounters it in his study, the pupil gains a greater sense of power than by doggedly and persistently (yet unsuccessfully) attacking a difficulty. There is a sense of selfhood and of power that comes from successful achievement that is never born out of mere effort to succeed. A legitimate function of the assignment, therefore, is to prepare the pupil for successful achievement in his study.

(d) And, finally, the assignments should be even from day to day, arranged, of course, to disclose an increasing difficulty, commensurate with increasing power. The amount of time required each day in study should be practically the same. There may be some deviations necessary, due to the nature of the topic and to the degree of interest in a given topic, but as a rule, the amount of effort required to master an assignment should be uniform.

§ 40. WHAT PUPILS SHOULD BE EXPECTED TO DO IN THEIR STUDY OF ASSIGNMENTS.

In the first place, the pupil should strive to master the pivotal aspects of an assignment. This simply means that he should learn to discriminate between essentials and non-essentials. The pupil's ability to do this will depend largely upon the nature of the teacher's assignment. Granting, however, that the assignment has been well made, the pupil should strive to get at the heart of the matter he is studying. This means that he should apply himself completely. It is, after all, merely a matter of undivided attention, a power well worth a great amount of effort by both teacher and pupil.

In the second place, the pupil should search for the relationships between the facts given. That is, the pupil should reflect, think, associate ideas. Measured by this standard there is much that passes for study which is the merest dawdling.

§ 41. THE RELATION OF THE RECITATION TO THE STUDY PREVIOUSLY DONE BY THE PUPILS.

Many teachers regard the recitation merely as a period set apart for the reproduction by the pupils of what they have learned. While this may constitute a legitimate portion of the work of the recitation period, it can never be the ultimate or complete aim. The study of assignments has, as its ultimate object, the growth of the pupil's power to think. Therefore, the recitation must be conducted in such a manner as to utilize

in new ways what the pupil has learned. That is, the recitation period is a reorganization period following upon a study period. In order to make the recitation such a period, the teacher must have a greater knowledge of the subject than that given by the text studied, and he must have a power of seeing the essential things studied about in various ways. A skillful teacher can so frame his recitation questions that the pupil can make the mental associations demanded by them only by utilizing what he has already learned. This is the highest phase of the art of questioning, viz., questioning that demands the utilization of the known in the effort to reach the new implied in the question. The pupil's power to think, to reflect, to form new associations, to reach new truth for himself—this is the test of successful teaching and of worthy learning. All else is chaff, sound, foam.

§ 42. THE RELATION OF THE PROBLEM TO TEACHING.

After all these analyses, descriptions, explanations, and arguments, we are in a position to see that, for the teacher, the one central problem of the recitation is *how best to stimulate the constructive thinking of the pupils of the class; how induce in them the most educative self-activity*. And it has been seen that what is called self-activity or constructive thinking is not in any way like "spontaneous generation;" rather, constructive thinking is a process which reaches the new by utilizing the related old—a process of moving from given conditions or relations to required conditions or relations. Constructive thinking is the process which solves problems. And hence, to stimulate constructive thinking in the pupils, the teacher should rely upon the *problem*. A teacher cannot educate the pupil; one's own effort is the only thing that educates him. All the teacher can do is to set up an environment that will stimulate the pupil to truly educative effort. And teachers need to realize that their most efficient instrument in stimulating the self-activity of pupils is the question which, for the pupil, is, essentially, a *problem*.

CHAPTER X.

REALISM AND SYMBOLISM IN SCHOOL WORK, OR THE RELATION OF THOUGHT TO EXPRESSION.

In the preceding chapters on *Discipline* and *The Recitation*, there have been many references to the relations which exist between thought and expression, and to realism and symbolism as they are related to school work. The far-reaching influence of a correct understanding of these things warrants a special treatment of them.

§ 43. WHAT IS MEANT BY REALISM AND BY SYMBOLISM IN TEACHING.

Previous analyses have paved the way for a clear apprehension of what is meant by the terms *realism* and *symbolism*. Reality is one's consciousness, his mental processes, the actual associates of an idea, his meanings. Realism in teaching means that the teacher's effort is to induce in pupils this mental reality. This thought-getting by the pupil is the teacher's greatest concern. While reality is subjective, it is believed to accord with things *as they are*, and, hence, to secure realism in teaching, object-lessons, excursions, motor activity in construction work and manual training, etc., are used. Symbolism, on the contrary, means a form of behavior *expressing* an idea, a meaning, a mental process, or a conscious reality.

To illustrate both things:—Longfellow had a conscious reality, a series of thoughts and emotions and volitions relating to a certain group of experiences; he expressed this reality by joining words together in the poem called *The Rainy Day*. These connected words are symbols of his mental reality. To

carry the illustration further:—A teacher might teach so that the pupils would get only the words of the poem and a few images or so that each pupil would get a mental series much like the mental series Longfellow originally had, or like the mental series in the teacher's mind.

No teacher would consciously strive to give his pupils merely the symbols of a reality, but in many cases this is all the pupils actually get. This is due to the fact that while form is expressive of ideas, the control of form does not necessarily imply control of content. A large number of questions relating to schoolroom method find their answer in the answer to the broad question, What is the relation of thought to expression?

The mind of the newly-born child is contentless—without thoughts, ideas, percepts, though it undoubtedly has the power to develop thoughts, percepts, etc. How does it develop these contents? Evidently its contact with the world has something to do with the process; and the world does simply this—it excites nerve-endings and the excitation is conveyed inward to some centre of motor response. This motor response, or motor adjustment to a stimulus, antedates the conscious response. Moreover, this motor response in turn produces an excitation of nerve-endings in the muscles, and hence is a thing that leads to another motor adjustment. This process might continue indefinitely without any thought, and perhaps in some forms of life does so continue; but in the child there comes a time when there is what is called conscious response to distinguish it from reflex action, impulsive action, and instinctive action.

But what shall be said regarding the possibility of conscious response in one in whom there is no reflex, impulsive, or instinctive action? From what is known of persons born partially anæsthetic,¹ the inference is that without the power of movement one could have no feeling, will, or knowledge. It seems that these preliminary movements are the bases for the development of mental life. James says, in substance, that a feeling or

¹ Case cited in James' *Briefer Course*, p. 375 ff., and 417.

volition stripped of its motor phases is a sheer nonentity. He even goes so far as to say that every percept, to remain such, requires a diffusion of nervous energy from the cerebral centres.¹ It may be held, then, that no mental reality could be formed without motor attitude or be maintained as such without motor attitude.

§ 44. THE FORMATIVE INFLUENCE OF MOTOR ATTITUDE.

It is only a step farther to the view that this preliminary motor attitude, upon the basis of which mental reality comes to be, is symbolical in just the same sense that the motor attitude following it is symbolical.

Mental contents arise in conjunction with a motor attitude and are then expressed by a similar motor attitude. The attitude of reverence produces a feeling of reverence. This feeling could not exist without the attitude preceding it any more than it can continue without an appropriate attitude. The first motor attitude prefigures a feeling yet-to-be, and the second motor attitude symbolizes a feeling that is; the first prefigures the feeling by determining it; the second symbolizes the feeling by expressing it. To illustrate:—A man makes a working drawing of a new machine. This drawing symbolizes, or stands for, the machine that is to be. After the machine has been made, the drawing symbolizes, or stands for, the machine as it is.

The best treatment for sluggish, torpid, slow children is vigorous, rapid, accurate physical training. Mental alertness and quickness are developed by securing bodily alertness and quickness. The drill of a military school is good for a boy who, in his teens, does not seem to have any sense of conformity to social requirements, who has a tendency to throw off the forms of civilization and return to savagery. Very often the life of a military school will make a man of such a boy. Why? Simply because of the influence of bodily tone and bodily attitude upon

¹ *Briefer Course*, p. 376.

mental tone and mental attitude. At these military schools it is sought to impart the physical tone and attitude, and to natural processes is left the result. The failures in such schools are due, in large part, to the force of already established physical and mental habits. Most boys will become civilized without this military discipline, because of their interest in doing as others do, and because of the formative influence of such action.¹

All this simply means, when viewed from the genetic standpoint, that the physical attitude which is expressive of a mental attitude, if assumed and persisted in, will result in the formation of a parallel mental attitude. It means that "expressive attitude," or expression, is also a "formative attitude." In other words, motor attitude may form or reveal mental attitude. And, genetically considered, the formative phase of motor attitude precedes the revealing phase. Or, to state the conclusion differently:—(1) consciousness is motor in its origin; (2) consciousness exists, in early childhood, just to the extent that it is motor; (3) all consciousness tends to become motor.

§ 45. THE CHARACTER OF CONVENTIONALIZED SYMBOLS.

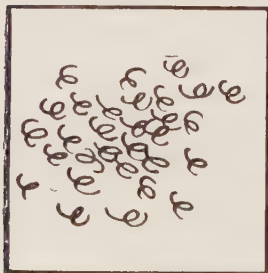
It is necessary, however, to make a further distinction in order to be true to the facts of life. Some motor attitudes are conventional and, hence, imitatively acquired. C-a-t, as either a spoken or a written word, is motor attitude; but one can not get the meaning of it, *the idea*, by simply repeating or writing it during all the days of his life. To be sure, one would, from this motor activity, get some idea; but, in all probability, not the right idea. So, too, one could say *plus*, or make the sign (+), without getting any adequate meaning of the symbol. To most readers of this book, the word *otiose* will be a good one to exercise upon in order to test the validity of the above positions.

¹ *N. E. A. Proceedings*, 1904, pp. 744-754, has a report on "Subnormal Children."

The reason for the truth of what has just been stated is that these motor attitudes are *conventional symbols* of mental realities. *Plus* means *to add to*, or *and*; it means that the terms between which it stands are to be united. No one can know what *plus* means except in terms of motor experience, but one who has this primary motor experience may associate with it a symbol, *plus*, *+*, or (to invent one) *thig*, by a process of sheer association, i. e., by contiguity.

The symbol thus associated with the thought or idea may be valid for the user alone, for him and for another, for him and the rest of the family or school, for all those who speak his language, or for all mankind. Primitive gesture is a symbolism which has validity for all mankind; shivering, for example, indicates that one is cold or frightened; falling relaxed upon the ground, that one is tired or faint. *Water* is a symbol having validity for all those who speak the English language; so, too, are all words which everybody knows and uses; but a large part of one's vocabulary is valid only for him and a small portion of those who speak his language. *Thosf-Tfu* is a symbol which has validity for only a small group of students whose motto it was for a year; a "school yell" has more of validity and meaning for the students who use it than it has for any of those who simply hear it given by them.

A little girl, not four years old at the time, used to tell stories and illustrate them. Here is one of her stories and an attempted reproduction of her symbolism in expressing it:—



Once there was a little birdie.
 Had a nest in a big tree.
 Nest had some blue eggs in it.
 Then it had little birdies in it.
 Once a birdie fell out of the nest.
 As she told this story she made the marks on the blackboard, but she had no idea of representing the character of the objects by the marks she

was making. When asked to make a nest, she made this:—



“Make a birdie.” Again the same sort of thing:—



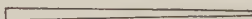
“Make a tree.” And again the same sort of thing.—



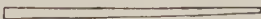
A little girl, five years old, once told a story with toothpicks. She put them down on the table, telling as she did so what each one was to represent. They are labeled as she named them, but one can not show how she put them together in the latter part of the story.



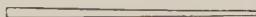
Birdie.



Dog.



Cat.



Boy with stick.

This was her story:—“Once a birdie was on the ground (this is the birdie). And there was a cat in the grass (this is the cat). And there was a dog with a bone (this is the dog). And a boy was walking along with a stick (this is the boy).”

“The cat saw the birdie and wanted to eat it. The dog saw the cat and wanted to catch it. The boy saw the dog and wanted to whip it. The cat started for the birdie; the dog started for the cat; the boy started for the dog. The cat ran away from the dog, and the dog ran away from the boy. And so the boy found the birdie.”

These illustrations are introduced to show how the child expresses his meanings by arbitrary symbols. In the first story similar marks stand for very different things; in the second, toothpicks are symbols of four widely different things. The symbols have only a passing validity for the child, for the next

time the bird story is told different marks may be used. By telling what this toothpick is, what the other one is, etc., the child is trying to make the symbols valid for both speaker and hearers for the present time.

If the symbol is valid for all members of a social group for to-day and to-morrow and for next year, too, then it is called a conventionalized symbol. All conventionalized symbols are restricted, small, constrained motor activities which express realities only to the initiated.

These conventionalized symbols give permanence and stability to mental life, because the symbol is so much of motor attitude, and, because motor attitude easily becomes habitual. Hence, thought realities may be readily recalled and connected in various ways just as soon as their conventionalized symbols have become habitual. Hence, also, the extremely rapid growth of the child in knowledge soon after he begins to use words as signs of his mental contents. It is generally believed by psychologists that memory always implies the refunctioning of brain cells, and that there could be no memory (as human beings know it) without this brain activity. For this reason it is evident that permanence and stability of mental life is primarily dependent upon motor attitudes without which there could be no organized brain connections.

While in a broad way, motor attitudes form contents, or, at least, furnish the material which the mind elaborates into contents or realities for itself, it is not true that conventionalized symbols have this formative power. The conventionalized symbol is valuable:— (1) As it expresses an already existing or appreciated content; (2) as it, by expressing a content, renders the content clearer and more subject to one's command.

The failure to appreciate these truths, or, appreciating them, the failure to be guided by them, is the fundamental pedagogical blunder of all ages. Form has usually preceded content in school instruction, because it was tacitly assumed that if the form were habitual the appropriate content would be called into

existence. The folly of this never had a better illustration than in some of the schools of twenty years ago in which *English Grammar* was studied in the fourth grade by committing the definitions to memory. Since conventionalized symbols have validity only for the initiated, the effort, in elementary school work, should constantly be to develop thought or mental content in advance of its appropriate form; that is, realism is the first concern of the teacher.

§ 46. THE INFLUENCE OF REALISM ON METHODS.

Before discussing in detail the value of symbolism, or form, in education and its relation to the various school activities, it may be profitable to see how the ideal of realism has changed methods of teaching certain subjects in the elementary school.

(a) Reading, the master key of all subjects, was formerly taught by beginning with the naming of the letters by sight; then a vowel and a consonant were joined making a syllable; these syllables were united into little sentences regarding the *ox*, the *ax*, *we*, *it*, etc.; then consonants were placed before these combinations, as *box*, *tax*, *lax*, *bit*, etc.; and again more sentences; and so on, by successive combinations, until the whole mechanism of words was mastered. This so-called "Alphabet Method" begins with the simplest of the form, or symbolical, elements of written language, viz., the letters; it then proceeds to syllables and sentences, following the order of increasing complexity of form.

After a while it was discovered that the child could learn to recognize by sight a series of words as readily as he could learn to recognize the letters of the alphabet. Hence, the "Word Method" of teaching beginning reading was introduced. In the word method there is possible a distinct advance because the child already uses oral words as symbols of his ideas and the written or printed symbol simply gives the child a new symbol for the content he already has. When the child has learned a few words in this way, he can name the words in the order

arranged by the teacher and thus get a content, or thought, or series of images from his oral-word-series. This method is better than the alphabet method because the child sooner comes to realize that printed words are symbols of ideas. After a start has thus been made the child must get control, in some way or other, of the mechanics of reading.¹

The "Phonic Method," of which there are many species, begins with an oral word which the pupils, following the example or suggestion of the teacher, analyze into its sounds. The word is also written or printed before the pupils and the separate sounds are associated with the letters. Having thus acquired the vocal equivalents of several letters, the pupils proceed to make out new words by giving and synthesizing the appropriate sounds for the letter-sequence. The idea which the word symbolizes comes into consciousness when this vocal synthesis is uttered, provided the child has already associated the idea with this particular oral word. This method introduces the child to reading by giving him control of a mechanism by which he can translate the separate letters into sounds and thus build up oral words already significant to him. That is, this method recognizes that the child can not get contents from the symbolism of the printed page unless he has the power to translate these symbols into equivalent oral words already significant to him.

The more recent methods of teaching beginning reading by basing it upon sentences derived from nature study, literature, and games are recognitions of the truth that words are symbols to the child only upon the condition that he associate ideas with them. Teachers have learned another thing, viz., the more vivid the idea in the child's mind and the more he is interested in the idea sequence, the more readily will he come to associate the written or printed word with its appropriate idea. For these reasons the child will, for a time at least, make more rapid progress in learning to read by basing the material upon

¹ It may be noted here that the mechanics of the process can be acquired only by sheer association.

games in which he delights than by basing it upon such remarkably dry and uninteresting sentence, as: *I have a slate. I have a pencil. I see a cat.* Teachers are destined to learn another thing, viz., if they can succeed in awakening a desire to learn to read, proficiency in reading will be acquired in one-half the time now spent in acquiring it. Dull, listless, monotonous reading is largely the inevitable outcome of the usual plan of having the child read without a genuine motive.

(b) Geography was, for a long time, taught from the form side, i.e., the child learned definitions of geographical concepts by committing them to memory rather than by building them up for himself on the basis of experience or on the basis of memory and imagination. He studied maps and map questions without first having made maps of surface features and regions well known to him. He was supposed to learn of industries, commerce, and government by learning the words of the textbook, or, at least, by learning the thought of the book. All this has happily changed. There is a symbolical phase of geography, and this symbolism can have validity only as the child by a process of sheer association regards it as symbolizing his already appreciated mental contents. Hence home geography and its symbolism are studied first; then by industrial and commercial connections, the study widens to adjacent regions, to regions more remote, to the earth as a whole. All of this change of method has come about through the belief that conventionalized forms have no power (genetically considered) to form contents.

§ 47. THE VALUES OF CONVENTIONALIZED SYMBOLS TO TEACHING.

Without examining the changes in method in other elementary school subjects, the values of conventional symbolism, or form, to teaching will be considered.

(a) The conventionalized symbol is an effective and rapid means of expressing one's ideas. It would be extremely difficult to express one's thoughts by pantomime symbols because

these are so complex and difficult to make. Because they are extremely complex they are liable to misinterpretation. Not so, however, with conventionalized symbols; each has its definite idea back of it, and, being quickly made, expresses this idea effectively; and a series of such symbols expresses a series of ideas with great rapidity. If the reader will try to express a sentence in pantomime gesture, he will be convinced of the great value of conventionalized symbols for the effective and rapid expression of thought.

(b) The conventionalized symbol also renders the expression of one's ideas definite. The phrase *last June* makes the time relatively definite. Try now to express this to one who understands the time series but has no conventionalized symbols to express the parts of the series. If one expresses it as the time when flowers were in bloom, or as so many moons ago, or as the time when trout go up stream, it still lacks the definiteness which is characteristic of the words. Although one might express that a friend went fishing with him, he could not express who he is any more definitely than by pointing out where he lives.

(c) The most complete expression of one's thoughts is possible when conventionalized symbols are supplemented by expressive gestures. In fact, symbols are made up chiefly of terms derived from motor attitudes and terms descriptive of motor attitudes. Words have a motor meaning which gesture brings out; and with this motor attitude comes the connotative feeling in a greater degree than by the use of the symbols alone. It is no mere accident that the speech centre is localized in the brain adjacent to the area which controls the movements of the more dextrous hand; nor is it an accident that speech begins to develop rapidly as soon as handedness becomes clearly marked in the child.¹ Expressive gesture is a great aid in supplying the connotation of words, and a great aid also in bringing out the precise meaning involved in the words used.

¹ Baldwin's *Mental Development*, Vol. I, pp. 67, 69, 71.

(d) The teacher, however, has, as his primary object, the awakening of thoughts in the child. The test of thoughts is expression. The teacher must, therefore, see to it that the child has some adequate means of expression. The most adequate form of expression is that which most definitely, completely, rapidly, and effectively renders one's thought transparent to the other to whom he wishes to convey it. In organized society, ability to use conventionalized symbols or forms of expression is imperative, for effective expression is possible only through the use of forms that are valid for the whole group. The establishing of this expressive ability is, next to the awakening of thoughts in the child, the greatest concern of the teacher.

(e) One reason for the last statement is found in the fact that the use of a conventionalized symbol has a reflex influence on the thought. By expression the thought becomes more definite. Many people find that the attempt to write out their thoughts renders the thoughts clearer. Hence, the repetition by the pupil of the story he has learned in literature or the multiplication table (provided it be not habitual already) renders his thoughts clearer and more definite. There is always an appreciated vagueness about a thought which one can not express in conventionalized symbols. Hence, the use of these symbols has a distinct relation to the development of the child's power to think effectively.

Having thus set forth some of the values of conventionalized symbolism to teaching, a consideration of the relation of conventional symbolism to the various school activities is demanded.

Every genuine mental content has a form. It has been seen that motor attitude prefigures a content and also expresses this appreciated content. There is perhaps no idea, however insane it may be, that may not be expressed in some way or other. The activities of the insane are probably as truly expressive of their mental contents as are the activities of the sane. The insane person's thoughts are valid for himself alone, however, while the ultimate test for sanity

is the validity of one's thought for both himself and his fellows.

In the process of school education only those related ideas having this social validity are selected, and of them a course of study is made. If the teacher can succeed in influencing the child so that he thinks these socially valid ideas and then acts so as to express them adequately, he has succeeded in educating the child for social participation. If what has just been said is true, every study in the school must have a form phase and a content phase. And, moreover, this form phase is a conventionalized one.

The necessity for this conventionalized form phase in school work may be clearly illustrated. Suppose that the teacher, with consummate patience and skill, presents "Grant's Campaign Against Vicksburg" to an eighth grade class, and that when Artie Smith is called upon to recite on this topic he begins to dance around the room. The teacher would feel at once that this was a case for the principal or the police. And he would feel so because Artie's response is different from the conventionalized form of expressing ideas relative to this topic. If a boy's only response is giggling, one can never tell what he knows about the Milky Way. Without the conventionalized symbols, or reaction, knowledge can not be adequately expressed.

Hence, content and form are the two great concerns of the teacher. Genetically, content should and must precede conventionalized form. But when there is some degree of acquaintance with conventionalized forms the child can get contents through his reinterpretation of the forms placed before him. In fact, no elementary education which does not develop this ability to interpret conventionalized forms into equivalent contents is satisfactory. The thought of the race has in large measure been transmitted to present society in conventionalized forms, and the child should master the combination. To this all agree; but there are dangers in the process.

The danger is what is called *verbalism*—the use of symbols without the equivalent ideas in consciousness. Verbalism is

common just because it is so easy for children (and for adults, too, for that matter) to establish the motor habit required by conventionalized symbols. As already pointed out, conventionalized symbols are always small, restricted, constrained motor activities. Since it is so easy to establish these habits, the child finds it easier to master the symbol than to master the meaning. It is easy to "invert the terms of the divisor and proceed as in multiplication," and difficult to understand why it is done. It is easy for a child to learn from a book that "Newport is noted as a summer resort," but difficult to form any adequate idea of what that really means.¹ What wonder if, when he has also learned to say, "Gloucester is a famous fish market" he should get them mixed and say, in response to a question regarding Newport, "Newport is noted as a fish market"? When the child gets nothing but the symbolism from his study of a textbook in history, no wonder that he can not tell whether the First Continental Congress met before or after the battle of Bunker Hill. So persistent and insidious is this tendency to verbalism in schools of all grades that teachers must constantly guard against it.

Dangerous and insidious though this tendency to verbalism be, elementary education must develop in the child the ability to interpret conventionalized symbols. In the development of this ability, the teacher must be forever demanding of the pupil some other expression of the meaning he has obtained from the symbols than that of the original symbols. Variety of expression, constantly insisted upon, tends to develop self-reliance in the pupil and also the habit of reflecting upon the meaning of the symbols he encounters.

§ 48. CONCLUSION ON THE FORMATIVE INFLUENCE OF MOTOR ACTIVITY.

Summing up:—Every subject has a content phase and a conventionalized symbol phase. Genetically, the content should precede the symbol. However, the ability to translate symbol into

¹This illustration is based on reports by Supt. A. V. Greenman, Aurora, Ill.

appropriate, equivalent content must be developed. The use of symbols is always in danger of becoming verbalism, a habit which means arrested intellectual development.

If now the view be broadened to include forms of expression which are not conventionalized, it becomes evident that their use in schools has a distinct formative value. The upright, alert way of sitting, of standing, of walking, gives rise to a mental attitude of alertness, of balance, of control. The tone of a schoolroom is largely a social consciousness resulting from the habitual motor attitudes of the pupils. Physical coöperation begets the spirit of social coöperation. The effect of music in developing a school spirit is largely due to the fact that one sees and hears his fellows doing what he himself is doing, and thus each gets, through the similar physical expression, the similar feeling. No wonder that fads and fashions have their day and their feelings with children as with adults. If one wants to get the "Indian Basket Craze" or the "Bead Work Fever" he should make a basket or set up a loom.

The president of a normal school used to say:—"Young people, press yourselves against the molding influences of your environment." His thought was that the students could get what the school had to offer only by actively adjusting themselves to its various requirements and opportunities. Over and over again it is proved that those who actively participate in anything—be it a game, a song, a dance, a church sociable, a missionary society, or a process of industry—get more from it than do those who simply look on.

If the teacher regards, as the end of all his efforts with the child, an actual, helpful, kindly, effective, generous, adequate social participation in the life of the race, he will surely find that the intellectual, emotional, and volitional phases of participation are possible only as they are matrixed in, or arise from, motor activity. Hence, in all elementary school education large use should be made of motor activity in its various forms, not only as an expressive thing, but also as a formative thing.

It should also be evident that the motor activity which has become a habit is no longer educative. One carves a certain design for the panels of a table and through the carving he is influenced, formed, trained, changed; the world of carved things thereafter has a new and deeper interest for him. But suppose he continues carving panels just like this one, day in and day out, year in and year out, what will be the effect? A closed series will be formed, no new associations will be set up, and he will cease to learn from his activity. Any trade or occupation is educative as it is being learned, but as soon as it becomes habitual, mechanical, automatic, its educative aspect disappears. Those trades which constantly involve new relations, new adjustments, and change are the ones which are the most educative. From the explanation just given it can be seen why the increasing division of labor which shreds occupation to a small, mechanical routine is really dangerous not only to the development but also to the survival of genuine intelligence. And it should also be clear that simple, unthinking repetition of the symbolism of knowledge by pupils fails to be educative. One ought to say, perhaps, that all mechanical, unthinking repetition, either physical or mental, is formative—the inevitable product being stupidity.

When one stops to reflect upon the course of elementary education, as it is shaping itself in response to social pressure, he sees how largely the formative influence of motor activity is being recognized. Drawing, painting, modeling, and construction work are not merely so many means of expression—they have a formative influence far greater than their expressive function. Teachers have given up the plan of developing the right attitude toward industry and labor by means of textbook study, and in its place have put manual training and domestic economy as affording *things to be done by pupils*. So, too, in rural schools teachers are beginning to find that interest in agriculture and farm life can come only from instruction which is based upon doing. The formative influence of physical exercises and games

is being recognized in a practical way in many schools. And, as regards the conduct of pupils, teachers are coming to recognize that the great thing is the influence of conduct upon civic attitude. In short, the aphorism, "We learn to do by doing," may be stated thus:—"We learn to think, to feel, and to will by and through our doing."

In a broad way, the ideas gained through motor activity are the basal ones in life. The silk worm transforms mulberry leaves into silk threads; the poppy transforms heat, moisture, and loam into delicately colored, gauze-like petals; the mind transforms primary motor images into literature, art, science, and philosophy. In this process of transformation, conventionalized symbols should always be subordinated to those deeper, broader forms of experience which are idea-giving, or formative.

CHAPTER XI.

STAGES OF KNOWLEDGE AND STAGES OF INSTRUCTION.

The child changes, grows, develops, and each particular change influences his inner self. In this process of growth there are certain clearly marked stages which the teacher should understand in order that he may the more effectively adapt the materials of education to the changing self of the child.

There are no observable gaps between the child's first crude knowledge and his most highly refined knowledge as a mature person; there is only a more conscious predominance of certain elements or phases of consciousness at one time than at another. To know a "flower in the crannied wall" is to know all things; to know any one thing implicitly involves all that is explicit in knowing any or all other things. The so-called "higher mental processes" are implicit in the lower ones. And these implicit phases may become explicit to a greater or less extent. The so-called "stages of knowledge" are merely names for stages in which certain intellectual phases of consciousness are strongly explicit, as, for example, the imaginative stage, the sense contact stage, the memory stage, the concept forming stage, etc. One may conceive of stages of feeling and stages of will as well as stages of knowledge. In a previous chapter the chief stages in the sense of selfhood in developing children were outlined. The present chapter will analyze the stages of knowledge and inquire into the demands made upon instruction by the characteristics of these several intellectual stages.

§ 49. ANALYSIS OF KNOWLEDGE INTO IMAGE AND CONCEPT STAGES.

In order that one may get at a glance the outline of the chapter, the following classification is introduced:—

I. Image Stage:—

- A. Wonder and name-getting.
- B. Make-believe and fancy.
- C. Dramatization, games, and imitation of social activities.
- D. Invention, individual achievement, distinction, and discovery.
- E. Causal series from sense contact.

II. Concept Stage:—

- A. Concept forming, classification, and definition.
- B. Judgment forming and opinion making.
- C. Causal thinking and the formation of personal attitudes.
- D. Logical thinking and systematization.

There are but two stages of thinking, and consequently but two stages of knowledge, viz., (*a*) the image stage, in which the response of the mind to a physical stimulus is the characteristic feature, and (*b*) the concept stage, in which the characteristic is that the terms of the thinking have been derived by the mind itself from reflection upon its sensory-derived experiences. That activity of consciousness which follows upon the stimulation of a nerve-ending or of a set of nerve-endings is called an immediate image, or percept. That activity of consciousness, on the contrary, which follows upon the activity of a brain cell or set of brain cells and which is not produced by the stimulation of a nerve-ending is called a mediated image. Of these mediated images there are two kinds; memory images which are regarded by the mind as equivalents of former images, and constructive images (called imagination for lack of a better term) which are really new combinations and groupings of former images or parts of images. By means of these mediated constructive images, one's actual experience is broadened to include (ideally at least) the possibilities of his actual experience. The image, consequently, is sometimes defined as "a symbol of an actual or possible experience." But it must not be forgotten that, genetically considered, images arise out of contact with objects.

The concept, however, is, from this standpoint, "a sign, or symbol, of the essential characteristics, elements, or relations of a group of actual or possible experiences." And this sign of a group of experiences comes into being for consciousness by the mind's reflective activity. Images are at first connected in a spatial or temporal sequence by which one's mental activities are limited (even when memory is active) to things as they have actually occurred in his experience. It is through thinking by similarity and causal connection that this experience becomes recombined into groups or unities which are concepts.

It is not maintained, however, that there is a sharp, absolute line of demarcation between images and concepts. All that is urged is that the mind regards some of its activities as referring to particular things in the objective world, while other of its activities are regarded by it as referring to meanings or unities which it itself has made. At times, nevertheless, the mind regards its own concepts as signs of an objective order; as, for example, some men regard the law of gravitation as an actually existing objective reality. This is due to the eccentricity of thought—the tendency of the mind to regard all its own activities as objective realities; and this is due, it would seem, to the fact that all consciousness is motor in its origin and tendency. A little consideration, however, will convince anyone that all scientific and mathematical laws are simply thought-constructs derived from reflection upon experience.

It is not maintained that the thinking of any one person is ever wholly of the image or of the concept type. The two types of thinking overlap and interweave in a wonderfully complex way. Some minds seem to think almost exclusively in images; the great movements and stages of history are summed up in pictures of men and of places; the law of gravitation is imaged as a falling apple; the expansive power of steam is thought of as a lifted teakettle lid, etc. Other minds, however, seem to abstract essentials and think them in terms which can not be expressed in sensory terms at all. The essential thing to get at

is that the way in which the mind regards its activity (whether as relating to a particular experience or to the essentials of a group of similar experiences) is the only distinction between images and concepts.

Within each of these stages of knowledge, however, there may be distinguished sub-stages with well-defined characteristics, but which do not follow a set time order in their development. In the following pages the treatment will depart to a considerable extent from the traditional forms of analysis, because of a strong conviction that the sub-stages as outlined in the following pages are closely in accord with the reality of the child's expanding mental life, and, also, because such an analysis as is here presented will, all things considered, be more helpful to teachers than is the traditional analysis of adult consciousness found in the books on psychology.

§ 50. SUB-STAGES OF IMAGE THINKING.

A. Wonder and name-getting.

Intellectual life begins in wonder. Wonder means that the object presented is not immediately associated in a significant way by the mind, and that there is an effort so to associate it. Its opposite is described by the adjective *blasé*—everything is immediately given its place in the organized mental series, and is regarded as the “same old story.” There is nothing new for such a person; he is dulled and stupefied as is an overfed ox. Life, to the *blasé* person, is like a squeezed orange—dry, juiceless, shrunken. And out of such an attitude no intellectual growth can proceed. Growth in knowledge demands wonder. The best definition of genius is, “the ability to wonder at the commonplace.”

This attitude of wonder leads the child to ask questions of those about him, to experiment with things, to taste, handle, and smell things. The child's questions are:—“What is that called?” (in the hope that perhaps through its name he can identify it). “What does it do?” (perchance he can connect

with it by means of its function). "What's that part for?" (trying to see the relation of the part-function to the whole-function). And so on he goes, expressing his attitude of wonder by questions, and having it, in a measure, satisfied by getting names or words or actions which enable him to associate a new thing with other things and thus understand or know it. Fortunate indeed is the person in whom the attitude of wonder neither dims nor dies.

B. Make-believe and fancy.

Through the process just mentioned, however long it may continue, the child gets knowledge, and words and actions to express this knowledge. And with this equipment he begins his constructive career of learning through doing. He "makes believe"; that is, he acts as if he were a cat, a flower, a mouse, or a goblin; he acts as if a cat were an elephant, a tiny doll, a real baby, a crust of bread, a piece of cake, etc. This is fancy—regarding as real that which is unreal. In its first manifestations in the child, this fancy seems to be spontaneous—not a planned thing, but a natural phase of development. It grows by what it feeds on, and becomes significant in the formation of character as it is guided and directed by social criticism and suggestion.

Not all make-believes are worth while, even though all may be interesting and pleasurable to the child. The make-believe of the fairy story is worth while because it is essentially moral (in general) in its influence; it is true to life in all vital relations. So, too, make-believes with dolls, and the manifold plays of children founded upon human occupations and relationships are valuable in giving the child an appreciation of these life realities in terms which he can comprehend.

The extension of this field of fancy and make-believe is clearly recognized in the work of the novelist, the artist, the sculptor, and the composer. Of course there is something besides fancy and make-believe in these adult achievements; but

without this primary element these things would be impossible to adults.

There is, perhaps, no period in elementary school education during which the child's fancy does not need stimulation or, at least, food. Along the lines already indicated it should be cultivated, not entirely by or through any particular subject, but by and through and in every subject.

C. Dramatization, games, and imitation of social activities.

The preceding stage implies another very closely related to it—the stage of dramatization, games, and imitation of social activities. This stage differs from the second stage chiefly in the fact that while the second is largely spontaneous, the third is consciously performed. The child consciously (choosing means to a clearly conceived end) sets himself about achieving an end. The presence of choice, deliberation, end, motive, suitability of the means to the end, etc., makes this stage essential to any true development. The initiative must become internal before character is self-formed. So long as the child automatically responds to an objective stimulus, he is formed thereby, but not self-formed. He is the sport of circumstances, not the architect of his own fate.

The material, or copy, for this stage of development is found in the child's social environment, or chiefly so. The child may, of course, dramatize of his own accord the activities of a bird, but most frequently such dramatization is directly suggested by some older person or playmate, or indirectly suggested by the doing of the thing in question. In games complex in character it is clear that both the suggestion to play them and the details in the process are socially derived. It is equally clear that, however much of natural tendency or instinct to dramatize and to play there may be in the child, the content of his games and dramatization is determined by the character and suggestive force of his social environment.

In both dramatization and games the child is endeavoring

to reproduce through appropriate action the idea or image he has in mind; that is, dramatization and games are, essentially, conscious imitative processes. The "copy" is essentially of the image rather than of the conceptual type. But to make this copy real in action requires, as has already been stated, the conscious selection and utilization of former elements of experience in new relations. For this reason, then, conscious imitation is necessary to the development of independence and of the sense of power.

Conscious imitation usually finds ample copy in the social occupations surrounding the child. He reproduces this copy bit by bit, and thus builds up within himself an appreciation of the texture of that system of relationships and activities which we call society. "Ye must be doers of the deed before ye can understand the doctrine." It is not enough to understand the processes; for the feeling value (and hence complete and adequate knowledge) comes only with motor realization.

It is not necessary, however, that one do all things in this way; the principle of "serviceably associated habit" is operative and its operation is vicarious. One may have never worked out a fine on the "rock pile," and yet know how it is. If he has used an ax and a sledge, worked in the broiling heat of the sun, done things which he was forced to do, and had feelings of resentment against those in authority, he can realize what is meant by working out a fine on a rock pile—not fully, but fully enough for a law-abiding citizen.

One can understand the complex social life about him in no other way. One becomes humanized only through human activity. Hence, when this conscious imitative stage appears in children it demands nurture, it demands copy. Some parents will not allow their children to have hammers for fear they may mash their fingers; others forbid the making of mud pies. Some parents seem to think that their children can learn simply by reading. Some secondary school teachers seem to think that their pupils can learn about industries from books, and, to the

extent already indicated, this is true. But there must be a stock of primary experiences in terms of which these symbols are interpreted. All construction work, all manual training, domestic science, observation, and experimentation are founded upon this idea, and they yield experiences whose elements may become synthesized into ideals of life and attitudes toward it.

But, even granting the validity of the principles thus far advanced, certain questions regarding the proper field for the exercise of the child's conscious imitative processes still remain. These questions are:—

1. What things should be dramatized?
2. What games should be played?
3. What social activities should be reproduced?

The pages immediately following will indicate answers to these questions.

1. Dramatization—In dramatization the idea of the way in which a person (or thing thought of as a person) acts, behaves, or performs his part in a social relationship (or in a series of such relationships) is acted out. Usually this idea of a character is an inference from certain data already in the child's possession. The child thinks of himself as being the character or personality which is to be dramatized, and acts in accordance with this prevailing thought of personality. In the best dramatization all thought of self is lost, and with utter abandon the person becomes the character he impersonates.

In general, the most educative material for dramatization in schools is found in literature. Seldom are the characters isolated, but instead, have their destinies linked together. Hence, the dramatization of literature has a social reference. This dramatization, however, should be by the children and not by the teacher. Some of the fairy tales may be used, as *Cinderella*, *The Three Bears*, *The Four Musicians*, etc.; portions of *Robinson Crusoe*, of *Hiawatha*, of Indian stories, myths, and many songs; dialogues descriptive of the working out of human motives; even standard dramas may be acted out with memorized

parts, or with a reading of the parts. The drama, however, prescribes the separate steps in the dramatization and hence is not so truly and highly educative (though more perfect) as is that in which the child's own initiative determines the steps and selects the materials. Children may also with profit dramatize stories which they themselves have written.

2. Games—In a game there is an end to be achieved in accordance with certain regulating rules, and there is usually some person or thing whose function it is to oppose the achievement of this particular end by being "the stubbornly silent partner," or else by setting up another end the achievement of which is inconsistent with the first end. Hence, there arises the desire to win, to be more skillful, stronger, or acute than the opponent.

In many games, however, the achievement of an end by a group of individuals is the dominant note, and no opponent directly appears. In all such games the one thing that disorganizes them and prevents their realization is the ignorance of some one of the players; and hence, the real opponent is the complexity of the required coördination of movement, or, stated differently, the possibility of individual or group error. This fact of opposition is essential to the enlistment of interest, and is also that which makes development and growth possible through games.

If the ideas already set forth regarding the process by and through which the child becomes socialized be correct, the educative worth of games can be easily formulated. Games are truly educative to the extent that they equip the child with elements of behavior socially serviceable to him, or with standards of judgment, or with habits of ready and accurate judgment which serve him as types in different social situations. For illustration:—The politeness towards equals in many games becomes immediately serviceable to the child; the violation of a rule of the game has its penalty attached, and this, together with other features of games, leads to the standard, "Play Fair"; the chang-

ing situations must be seized upon instantly and a plan of action determined upon.

Nearly all games are learned by conscious imitation but, as elsewhere in human activity, progress is possible only through invention. Many children invent games for themselves, or change and modify them to suit conditions. On the contrary, some children not only always imitate, but are not able to do even this well, and consequently, stand aside as mere on-lookers. Those who imitate well become amateurs, enthusiasts, "cranks," "rooters," or even reliable players; those who can not imitate successfully may attend games because it is the style to do so, but they regard them as stupid or senseless; those who can improvise—invent expedients within the rules—become the "stars," the "professionals." From this standpoint, an acquaintance with games is desirable as a basis for appreciating the games played by others, and thus gaining the power to understand them.

Two things should now be evident:—The playground is an important educative agency; and the supervision of pupils' games is an essential function of the school, or teacher. Teachers are not responsible for all the influences that play upon their pupils, for there are extra-schoolroom influences of the street, home, and associates over which the teacher has no control; but a good teacher will exert such an influence over his pupils that it follows them during their waking hours and even affects their dreams. It is, therefore, a duty of the teacher to influence the pupil's ideals of play.

Not everything can be taught through games, nor should there be schoolroom games in all grades. In the lower grades many things may be learned through games, and in all grades the games at recesses and intermissions should be directed and supervised so that good, not harm, may result. Wrong social attitudes, such as sneaking, cheating, or even bullying may develop in some children if their games are not rightly directed. The desire to win becomes so strong that it justifies the means—rivalry and jealousy supplant coöperation and sympathy.

The element of physical exercise in games deserves a word of comment. Physical exercise with a real, interesting end in view is accompanied by feelings of exhilaration and of interest. It is, therefore, more serviceable, because it associates pleasurable feelings with bodily activity, than is a series of gymnastic exercises however carefully the latter may be planned, for the end (physical exercise or health) is usually so remote that it has little emotional intensity.

3. Imitation of social activities—In this topic the conscious imitation of industrial and commercial processes, conventional forms of social behavior (etiquette and behavior), and political processes are to be considered.

(a) Political processes—The reproduction of those forms of social activity which we call political will, of course, come only in the higher grades of the elementary school and in secondary schools. It is, however, an important element in education for citizenship, for the development of political attitudes can not wholly be trusted either to chance influences or to the study of constitutions and descriptions of political functions. Political action is only one phase of the very complex reality called society. As such it is an outgrowth of human needs and is a means to social ends. If this is true of political action in its relation to social action, the child should come to feel the need of government, of authority, as a means for the realization of the social needs of himself and others. He is not born with this clear vision, or insight; but, on the contrary, he often manifests a disposition to use everything, including his parents and his fellows, as means to his own private and personal ends. Physical force may, at times, be necessary to impress upon the child the fundamental truth that the ends set up by others have a validity greater than his own. Usually, however, the frequent recurrence of this necessity indicates a social fault other than that of the child.

The pupil should feel that the school is a place where he and others (including the teacher) are working together for cer-

tain common ends. This feeling is the feeling of "a community of interests," of what the sociologists call "social solidarity." For the successful accomplishing of these common ends, a series of constant ways of reacting and behaving is necessary. Unconsciously, at first, the child falls into these ways of behavior; and, gradually, as maturity warrants and achievement furnishes the basis, conformity gives way to coöperation—mere habit gives place to action from motive. It is just at this point that conscious imitation enters, the action consonant with the motive being selected in the process. In general, the child will choose actions that are efficient for the realization of the ends he sets up, provided only that these actions are present in his consciousness as copy.

Political action has two stages—the ballot box stage and the quiet, unobtrusive, daily stage. One's political duty may reach its climax at the polls; but the long preparation for this climax, and the long aftermath (during which the will of the sovereign people becomes a political reality or else an evidence of human weakness), have a duty no less insistent, no less vital than that of election day. This daily political duty is more of an attitude of mind than a habit. If so, the essential elements of this duty can become a part of the woof and warp of the child's mental life only by a daily attitude toward things. The daily attitude of the child toward the school is the most essential thing in determining his daily civic attitude. Of course, the extra-schoolroom influences may be stronger than those of the school, but schools should be so efficient that their influence outweighs all other influences in this respect.

It would seem, moreover, that this attitude of mind toward daily civic duty can come only through the physical attitude. This means, for the teacher, that the various activities of the school should be of such a character that the child, through participation, gets essentially the same feeling attitude toward the school that he ought to have in later life toward the totality of political life—the state. This feeling is not mere loyalty—it is

loyalty because of the opportunity for self-realization through service afforded by the object, be it school or state.

All this simply means that pupils should actively participate in the governmental phase of school activity. The pupil should feel that every rule of the school is for his benefit. And he should feel so (not by faith, not because he is told so by his teacher, but) because of his having seen the relation between his own ends and the activities of the school. In primary grades this feeling is and must be (because of the immaturity of the child both socially and mentally) largely a matter of faith; but faith should "approach zero as its limit" as the child reaches the higher grades; for, after all, mere obedience to external authority, with no matter how great degree of love and faith, is no adequate basis for participation in the political life of a democracy. The motive to action must become internal.

This brings to the front another question, viz., Can this civic attitude be brought about without the trappings, or concrete accompaniments, of actual government? Occasional elections according to the Australian Ballot System are not enough; but must the school then be organized as is a city or state? The Henry George School for Boys is a city or state in which the boys are citizens, and its success in dealing with boys whose early lives have been spent on the streets of New York is truly wonderful. So, too, the School for Orphan Boys on Thompson's Island, Boston Harbor, is founded upon this idea. The Hyde Park (Chicago, Ill.) High School is also a self-governing unit with all the trappings. Nearly all the grades of the John Crerar School, a ward school of Chicago, under the principalship of John T. Ray, are controlled by a pupil system of government. And many other schools are so organized.

The question should be narrowed a little. Granting that participation is necessary, the question still remains, Is participation possible without some form of coöperation? No, but that form of coöperation need not necessarily have any similitude to a national form of government. It may not be feasible

to have such a form, but the reality must be there. Pupils can learn to coöperate only by and through coöperation. Coöperation without a form is an abstraction. Therefore, there must be some form of activity by and through which coöperation becomes a reality for each child. To the individual teacher must be left the problem of what form is best for him to use.¹

(b) Conventional forms of social behavior—It will be conceded without argument that there should be training in etiquette, politeness, manners; but the extent of such training, and the content of such training are not so easily marked out. So much depends on the home life of the pupil and the status of the community. To outline a "course of study" in these things would be impossible, but their influence on the development of the child and the process by which he acquires them may be outlined.

The Lange-James theory of emotion states that emotion genetically depends upon and follows upon physical activity.² The "return wave of expression," which gives rise to "sensations of having acted" is the basis from which feeling, or emotion, develops. Therefore, physical activity must precede the development of feeling. The physical activity of politeness is, therefore, the necessary antecedent of the mental attitude of politeness. This is true of all manners. Hence, training in these things is the only way to develop and organize this portion of the child's feelings. Manners not only reveal the man; in a genetic sense they form him. Just as a conventional symbol, such as *gentian*, expresses a thought reality, so, too, a conventional action expresses separate feelings toward others. And these feelings become socially communicable by virtue of their conventional character.³

The effect of manners upon one's development and their values for him may be best appreciated by considering what he

¹In *Jean Mitchell's School* the idea of the government of a school is worked out in a helpful manner.

²James' *Briefer Course*, pp. 375-390.

³*Conventional* means valid for both, understood by both. Teachers should become familiar with Emerson's *Essay on Manners*.

would be without them. This at once makes the matter so clear that it needs only to be summed up by saying that manners are as valuable to individual development and success as is knowledge.

It should be clear, also, that the primary stock of manners is acquired by imitation of elders or superiors. This makes the imparting of a primary equipment of these forms of behavior easy and also a matter of great delicacy. The child sees his elders doing a certain thing, acting in a certain way; and he does the same, thereby getting primarily the same feelings. The child's feelings, however, are not the same as the adult's for the adult has many associations the child knows nothing of. To illustrate:—In a family containing several children, a baby two weeks old died. One of the children, a girl aged nine, knew the fact but did not know how to behave. Soon, however, she saw adult relatives crying, and began to cry. From this crying she obtained a feeling of sadness. She watched the others and kept on crying most of the time for a day and a half. Then while at a neighbor's she naïvely asked:—"Mrs. —, how long am I supposed to cry because my baby brother died?" The adults had life experiences associated with the fact of death about which this little girl knew nothing, and yet she was imitating their action. When another death touching this girl's life shall occur, the weeping and lamentation of this, her first experience, will serve her as copy.

The same thing is seen in children in the presence of strangers. Fond mothers offer suggestions, as, "Johnnie, shake hands with the lady!" "Say, 'Thank you!' to the gentleman." In all such cases the verbal instruction is so much copy for the child to realize through action. Invention is possible to the child as to the race and is possible under the same conditions, viz., a stock of knowledge already existing and capable of new combinations. Manners, however, change slowly, and there is often a return to simpler forms, especially under stress of excitement. So, too, manners are slowly built up in a growing child, for he forms permanent habits slowly. Conscious imitation must be often per-

formed to result in habitual action or even in a strong tendency to habitual action.

While it is thus easy to give the child a primary equipment in manners, it is dangerous for two reasons:

First. The child may get nothing but the conventional aspect of the behavior. Genetically, the feelings from lifting one's hat to a lady are arm and chest sensations. If one stops with merely this formal activity, his manners may have polish and technique but they will lack in genuineness and appropriateness. The genuineness comes from associated feelings of respect, of deference, of loyalty. It is quite possible for one to have the form without the content; quite inevitably so at first unless children are allowed to be barbarians until they are well along in their teens; and there is danger that, even though one insists on the form and tries to instill the content, the form will be the only thing the child retains.

Second. The child may deceive others by his manners. He may behave properly enough and have improper feelings which are only intensified by being thus dammed up within him. Manners may thus be a successful method of deceiving others; and if this grows into a habit, its influence is bad.

(c) Conscious imitation of industrial and commercial processes. In the child's games he imitates in a loose and highly imaginative way many of the industrial and commercial activities of social life. Children play church, school, store, etc., and get therefrom a sense of what life is. But along certain lines of industrial and commercial activity this sense of what life is should become more definite by approaching more closely the reality. This can be brought about only by conscious imitation. It is usually left to the child's chance experiences outside of school. The school can not escape its social responsibilities by pleading lack of time or by saying that parents do not do their duty by their children. It is the business of the school, provided it be not done in the homes, to impart that which the expanding life of the child needs for its genuine socialization.

In the following outline of things which it is believed the child should thus imitate, it should be understood that within certain limits there is possible a substitution of equivalents for the things here outlined. The effort, moreover, is to outline only those things which the race has found it necessary to do for its own benefit and advantage in its struggle for survival and progress. It is believed that these things are fundamental in every civilization, and hence, a motor acquaintance with and understanding of them is essential to the civilization of a person.

(r) Tilling the soil is an ancient and honorable work. It is so fundamental to-day that it is said, "Agriculture is the primary source of all wealth." At least, contact with nature is the primary source of all the world's wealth. Early in the race's struggle, men began to till the soil, because settled homes were impossible without a food supply. People can not live wholly on a meat diet, and, in temperate climes, must raise cereals and vegetables during the summer. The child will grow to feel as does society only by performing the actions in question. Therefore, to plant seeds and care for them is a socializing process. And this planting, this mimic agriculture, should include the raising of flowers and of vegetables. The purpose of this training is not commercial, although the economic utilization of the products is an essential part of the lesson to be learned.

The social structure of to-day renders it impossible that children living in cities should have this training under the direction of their parents. Oftentimes the few flowers in the school-room are the only things along this line to enter the child's life. The school garden is an effort to provide a substitute for the larger training each child should have. It is not clear at just what point or points in the child's life this agriculture activity should come. There seems a very strong desire, at some time in each child's life, to care for plants; but the appearance of this desire seems to depend upon the suggestiveness of the social environment. If, therefore, this agriculture activity is to be directed but for a short period of the child's school life, it should

be when he has strength enough and motor control enough to get the most out of it, probably between the ages of ten and fourteen. If, however, the school attempts a school garden at all, the training should extend over more years and begin earlier in the child's life.

(s) Along with, preceding, or closely following (let the anthropologists decide) the beginning of this agriculture activity in the life of the race was the effort to exterminate injurious forms of animal life and to domesticate other forms. The desire to do these same things reappears in the lives of children in degrees of intensity which vary with the social environment. This world-wide effort is also world-long, for it is not at all likely that invention can ever fully destroy all pests or supplant the domestic animals. Then, too, there are certain ethical relations arising from the use of animals by men. These ethical relations can be brought out by the keeping of animals as pets. If a child treats his pet (be it dog, cat, goat, rabbit, mouse, pigeon, or wolf) as he should, he gets from this activity the essentials of what his conduct should be toward all animals. Toys, even those that move and make noises, can not fully teach this lesson.¹

This whole matter of attitude toward different animals is learned by conscious imitation. Some animals may be studied in the schoolroom, but few, if any pets should be kept at school. The homes should furnish the materials for this element in development; but teachers should encourage the keeping of pets and the painstaking care of them. A school menagerie is not an impossibility but it should be at a distance from the school.

(t) Another fundamental activity in the life of the race, both past and present, is weaving. Children can readily learn to weave on looms made in the schoolroom. Through this motor activity they can come to appreciate the significance of weaving in the life of the race. There is also abundant opportunity for invention in making designs and various articles. As mere busy

¹ Hodge, *Nature Study and Life*, pp. 33-44, has a good comment on the keeping of pets; and Hyde's *Practical Ethics*, pp. 98-103, treats the relation of men to animals.

work weaving is not worth while, but as a means of fostering inventiveness, of developing respect for industry, of setting up ends which the child can really achieve, it commends itself strongly to all teachers, and especially to those in lower grades.¹

(u) Then again, there are many simple domestic activities, absolutely necessary to the conduct of the home, with which children should become acquainted. Visual acquaintance is not enough; the acquaintance should be muscular. Moreover, skill should result. Pleasure comes with skillful success in this as in other things.

The extent to which these domestic activities become proper material for school instruction depends upon local social conditions and ideals. These conditions and ideals are variables, and hence, it cannot be maintained that all schools should teach these simple domestic activities. All that is here urged is that motor skill in these simple domestic activities is an essential element in the development of the child—essential to a symmetrical human development. The home, upon which people rely so exclusively for the perpetuity of civilization, cannot maintain its purity and influence if all become “boarders.”

(v) Then, too, shelter is as necessary as is food and clothing. The building of playhouses and blockhouses is more than simple amusement for the child. There are certain fundamental forms of this building activity which should be fostered. Boxes are so universally useful that every person should be able to make one. So, too, chairs, tables, shelves, etc. The making of these things implies the use of hammer, plane, and saw. Manual training work will certainly busy itself in the future with the making of these useful things rather than with the making of the quaint and the curious. The child can have a genuine motive in the making of these socially serviceable things.

Besides being serviceable, things should be beautiful. Even if the perception of beauty be an intuitive thing (which is doubt-

¹This topic is so fully treated in modern pedagogical literature that the reader is referred to it for further discussion and details.

ful), there is need of cultivating it. Here, again, visual perception of the beautiful is inadequate. Motor realization is essential to the development of a genuine appreciation of the beautiful. The cant and shallowness of art is found in those who repeat what others say, and who think that they have thereby exhausted the matter.

The beautifying of things has an extremely high utility—is socially serviceable in the deepest, truest sense. Hence, training in the harmonious blending of colors, the selection and installation of decorations, the arrangement of furniture and furnishings—training in all these things tends to develop a genuine appreciation of the beautiful. These motor experiences are capable of being dissociated and recombined in new forms, thus widening one's genuine appreciation. And somewhere, sometime, at home or at school, every child should gain skill in beautifying things.

(w) Nor can it be left to mere chance to determine whether the child shall learn about exchange. Descriptive matter may be temporarily understood but it will not be assimilated unless there is some concrete experience in terms of which it may be interpreted. Older persons have only to attempt to recall their arithmetical study of foreign exchange to verify the above. There is a mechanism of exchange socially and legally ordered, and no child should grow up in ignorance of it. Of course, with a minimum of actual experience, the child can imaginatively interpret processes of exchange which he can not possibly experience. It is urged here that this minimum of actual experience be as large as possible.

In what has been said under the heading, *the imitation of industrial and commercial processes*, the effort has been to show that skill in these fundamental forms of social activity is absolutely necessary to the proper socialization of the child. This proper socialization includes expressive activity as well as passive interpretation. Power to do and motive to do socially serviceable things are necessary elements of all true knowledge and of all worthy development.

(x) But over and beyond these fundamental things, every community has certain activities which are peculiar to it. Fully to appreciate this local social life one must imitate it. Hence, every community will demand more of imitation than has been outlined. It is not claimed that in all these cases skill should result. Also, some almost universal activities are too complex to be imitated closely by the child. They can be imitated only in a loose way. Such are the activities of the blacksmith, the shoemaker, the brickmaker, the printer, the carriage maker, etc. These activities may be appreciated, however, provided only that by imitation of simpler activities the child has acquired a stock of ideas in terms of which to interpret these very complex industrial processes.

Summing up now what has been contended for in this discussion:—Along many lines of industrial and commercial activity the child should gain a sense of what life is by conscious imitation. In no other way can he become broadly and thoroughly humanized. If the homes do not furnish opportunities for children to do these things, then the school should provide them.

D. Individual achievement, distinction, and invention.

Overlapping all the stages already treated and giving vitality to them is invention. Invention is simply the utilization of past experiences in a new way. It is present in the child's play when he changes the game to suit conditions other than those under which he first learned it. It is present in his make-believe and fancy and dramatization. Invention is that without which life is reduced to the dead level of doing forever as others do. And yet it is only by doing as others do to a certain extent that one ever gets the power and the material of invention. Originality does not mean making new things out of nothing; it means making new things out of old things by putting the elements of the old together in new relations.

Along with the exercise of originality comes a sense of individual achievement, a sense of power to do, and a sense of

being. This power to do is recognized by others and hence comes distinction—a feeling that others rely upon one's ability to bring things to pass. Social groups, from the "gang" to the nation, have ways of showing their appreciation of the one who can achieve old ends in new ways or new ends in original ways.

This stage, or phase, of intellectual activity has, as has already been stated, very close connections with both feeling and volition. It deserves special consideration because so many teachers unconsciously tend to discourage it. A graduate of a normal school after a year's experience in teaching said:—"I've learned that a teacher should give one form for the solution of problems of a certain kind in arithmetic, and then have every child keep to that form." This simply means that the child who is able to invent is to have no chance in the arithmetic class. A fourth grade arithmetic class was struggling with this problem:—"Frank bought eight pears for fifty cents; he sold four of them at ten cents each; and the remainder he sold at five cents each: how much did he gain?" Most of the pupils reasoned thus:—four tens are forty; four fives are twenty; forty and twenty are sixty; sixty is ten more than fifty; therefore, etc. One boy, however, had a different solution. He said that "since eight pears cost fifty cents, four pears cost twenty-five cents; now, if four pears are sold for forty cents, the gain is fifteen cents; and if the other four are sold for twenty cents, the loss is five cents. Then the gain is fifteen cents less five cents, or ten cents." Strange as it may seem, the teacher did not understand the solution and told the boy that his way was wrong.

No doubt there must be some one form which is developed by the teacher, but there are few, if any, arithmetical processes which have only one correct form. And, after all, as Dr. Frank McMurry says,¹ it is the thinking involved in the process of solution and not the answer which is valuable. Number relations having any great degree of complexity may be thought in different ways, each equally correct. The really valuable mental

¹ *Method of the Recitation*, p. 131.

activity in arithmetic is that which utilizes previous mathematical ideas in the solution of new problems. The child, however, will not long care to think about problems whose answers do not have a value for him.

A fourth-grade class in history in the — schools was learning about Robertson and the settlement of Tennessee. The method was simply this:—The teacher told in a dramatic way a small portion of the story, and then asked, "Who can tell me what I have just told you?" The pupils responded vigorously enough, the fortunate ones being allowed to stand in front of the others and repeat as accurately as they could, just what the teacher had said. There was not a question by the pupils during the hour, nor was there any effort to have them think for themselves. History should not be imitatively acquired by fourth grade pupils; rather there should be constructive imaginative thinking by each pupil, so guided and directed by the teacher that each child reconstructs for himself the historical sequence in its essential elements and relations. This idea is opposed by some historical scholars who make a knowledge of historical sequence the only thing sought in the teaching of history. For adults, scholarship as broad and accurate and deep as possible is desirable and should be insisted upon; but for pupils in the elementary grades the great thing is appreciation because of its formative influence; and appreciation is dependent upon the kind and amount of self-activity put forth.

Inventiveness can be stimulated and directed by social criticism, and the teacher has a wonderful opportunity to direct the inventive tendencies of pupils. But along with this, as with all genuinely serviceable things, there is a danger. The sense of personal achievement and prowess may become unduly expanded, the child may become "inflated," "smart," "pert," "saucy," unruly and disobedient. Such children are not vicious, that is, they do not take pleasure in doing mean things or in annoying others—they simply have an undue sense of their own importance and relative worth. This condition is not an inevit-

able one. If properly treated by others the child should not become inflated. But it is much better that the child should be inflated than that he should remain forever "collapsed"; for, after all, the world with which the child as an adult will have to deal, will soon teach him his true worth and his true position. Self-reliance is the thing desired, and it is better to secure it by a circuitous route than not to secure it at all. The fundamental proposition is:—Self-reliance can be built up only on the basis of achievement, of known power to perform; and this sense of prowess usually comes through invention rather than through imitation.

There are manifold opportunities in the work of the school to spur children on to invention, provided the teacher can see and seize them. Verbal mastery strongly insisted upon is the strong point of many teachers; it is also the death-knell of invention. The test of being "busy" is perhaps the poorest test of the efficiency of a school, for one may be busy without putting forth any genuine constructive effort. In fact, "busy work" has come to mean "something that keeps the children quiet." It is often felt that if the child has good lessons and does not cause any trouble, he is "getting along well." Very often, in such cases, the child is developing into a dull, prosaic, lifeless, wooden image of mediocrity. Some schools by their methods seem to put a premium upon stupidity.

E. Causal thinking from sense-contact.

There is another phase of development closely allied to the ones already discussed, viz., causal thinking in image terms. The following questions and answers illustrate this kind of thinking:—

Why does the train move?

"The engine pulls it."

Why does the engine pull?

"Because the wheels go round."

Why do the wheels go round?

"Because the steam makes them go round."

Why is there steam?

"Because there is fire in the engine."

Each answer is an image of a something or other, and each answer is satisfactory to the child because his idea of force, if he has any at all, is an image of something that moves. Recently a four-year old girl exhibited her doll that closed its eyes when put to bed and that cried upon occasions. What makes it close its eyes? she was asked. The answer came without hesitation, "'Cause I put it down that way" (showing). And what makes it cry? "'Cause I press it so" (showing again).

This causal thinking in image terms is applied to things that are animate as well as to inanimate things. A little boy was once asked, Why does an acorn grow into a great oak tree? He replied, "'Cause there is a little oak tree in the acorn, and it keeps growing all the time."

There is another kind of cause with which the child becomes acquainted early in his life, viz., human motive. A few questions and answers from classroom exercises will illustrate this kind of causal thinking.

(1) Why did Boone decide to escape from the Indians?

"Because he had heard the Indians making plans to capture Boonesborough."

But why should Boone care if the Indians did capture Boonesborough?

"Because Boone's wife and daughter were there, and he did not want them to be carried off by the Indians."

(2) Why are the British anxious to hold Gibraltar?

"They want to hold it so that in time of war they can keep the enemy's ships from passing into or out of the Mediterranean."

Why do the British keep Malta?

"Because it gives them a place to coal their ships as they go from Gibraltar to Suez."

(3) Why didn't Grant march at once against Vicksburg from the south?

“Because Johnson with a Confederate army was over near Jackson and might come up in Grant’s rear.”

(4) Why did Robinson build a boat?

“Because he wanted to explore the coast of the island.”

(5) Why did the little leaf feel sad?

“Because it was left all alone on the tree, and the other leaves had all gone away.”

These illustrations show how the child explains things in terms of human motive. Human motive is perhaps the first cause, or force, with which the child becomes acquainted, and perhaps the most significant one, also. He finds it within himself, and just to the extent that he thinks things as personalities, he finds motive in them. The child probably thinks his own motives in terms of motor images. He wants something to eat, and this want so quickly goes over into motor attitude that the two seem almost one. He wants to go skating and immediately his whole muscular system shows it. This is why children make such good beggars—they beg with their whole bodies and not merely with words.

Having now shown what is meant by causal thinking in sense-contact terms, it should be stated that the purpose in introducing it is to show why teachers should not expect younger children to explain things in their abstract causes. Concrete explanations are sufficient and efficient. Even adults, when they wish to make a matter perfectly clear, resort to concrete illustrations.

This analysis of the sub-stages of image thinking is now completed, but nothing has been said about the sense-contact stage, the memory stage, or the imaginative stage. In a way these stages are really levels of intelligence. They may be expressed respectively as idea-getting, idea-reproducing, and idea-modifying levels. No one level could be without the other two, and no one actually precedes the others in consciousness. That is just what many teachers have failed to realize. Instead they have thought that children from seven to ten were adapted to

observation; from ten to twelve, to memory; from twelve to fourteen, to imagination; or some other equally untrue and vicious age-and-mental-order has been put forth as a reality of developing consciousness. "The whole child comes to school," and it is to the reality of the child's expanding life that one must attend. After all, all classification is merely a matter of convenience—the human way of expressing an appreciation of the fact that some things are alike and that some things are different. The most helpful classification is the best one; and the endeavor has been to group the child's image thinking into classes such that the teacher may the more fully understand him and the more effectively minister to his genuine development.

CHAPTER XII.

STAGES OF KNOWLEDGE AND STAGES OF INSTRUCTION (CONCLUDED).

§ 51. SUB-STAGES OF CONCEPT THINKING.

It has been seen how the mind becomes possessed of images, and also some of the ways in which it uses them. There is, however, a process of comparing images by means of which the mind (1) attends to the like elements of the images, (2) thinks these likenesses apart from the images as wholes, and (3) synthesizes these likenesses into a new mental activity called a *concept*. When one by reflection finds the functions of these like elements, he regards them as essential or necessary. Hence, a concept is a mental activity symbolizing the essential relations of a group of actual or possible experiences which are thought of originally in image terms. It should also be evident that concepts may be formed on the basis of other concepts just as imagination combines images in new ways. The concept, while not like the images upon which it is based, is nevertheless connected with them in such a way that, if one fixes his attention upon a concept derived from images, it will reproduce those images in consciousness. The concept is not cut off from concrete reality—it is simply the mind's way of "thinking the many into the one"; or, as philosophers say, "finding unity in variety."¹

A. Concept forming, classification, and definition.

The "essential relations" in a concept are essential only to the mind that so regards them. People used to think that a bi-

¹The reader is now able to understand Dewey's definition:—"A true concept is an organic unity, containing within its unity synthetic connection with all the diversity of objects to which it refers." Dewey's *Psychology*, p. 208.

cycle must have a chain, a single seat, etc.; their concept was, from the present truth about bicycles, erroneous; but, at the time, they regarded chain, single seat, etc., as essentials. The activity of comparison grows right out of thinking by similarity; and hence, almost as soon as a child begins to re-think his experiences in terms of similarity, he begins to form concepts. These concepts are crude, childish; but they are important, for they show the tendency to group essentials together.¹ This process when referred to objects or to ideas is called classification.

Then the reverse movement begins—that of giving the meaning of the concept. This giving of the meaning of the concept is definition, by which the essentials of a concept are set forth. Since the mind may form concepts unconsciously (or, at any rate, speedily lose all memory of the process), definition is an especially valuable mental operation, for by it the mind reflects upon its own meanings. No one can or should define all his concepts; but one makes his own meanings clearer to himself by the effort to make them clear to others.

Definition, as here considered, is by no means to be confounded with the process of repeating definitions learned from books, for the value of the process lies in the reflection upon meaning rather than in the association by contiguity necessary to the learning of a word-sequence. And so the process of synthesizing essentials appreciated by comparison should be correlated with the process of definition. All instruction should seek to lead the child to this twofold thoughtfulness.

All concept forming is a synthesis; all definition is an analysis. Words are symbols by which concepts and definitions are expressed. Single words express concepts and at the same time name:—(1) a class of objects, as *bird*, *bacteria*, *ship*; (2) a force, *electricity*, *steam*; (3) a quality, or attribute apart from the thing itself, *blue*, *sweet*, *forcefully*; (4) a relationship between ideas or objects, *on*, *by*, *is*. The child usually gets words at first as names, and by a process of conscious imitation;

¹ Hobhouse's *Mind in Evolution*, pp. 292 ff.

but this gives him only the form phase of language. The content phase of language is the thought, the meaning; and this meaning can come for one only through his own associative, reflective self-activity. If the mere getting of words as names were genuine learning, all methods of teaching could be reduced to the way in which parrots are trained to talk. Skill in teaching is the power to provoke associative, reflective self-activity in pupils.

B. Judgment forming and opinion-making.

Whenever one attempts to express his meaning or his thought about anything he uses words—not to *name* the things, but to express the relationship between the states or phases of consciousness. This inner mental perception of relationship between ideas or activities of the mind is judgment. Hence, definition is impossible without judgment. Definition is judgment-making; but not all judgment-making is definition. *I am writing*, expresses a judgment but not a definition; it is rather a description of my actions. *Writing is a series of conventionalized crooked marks used to express one person's thoughts to another*, expresses a judgment and also a definition—it expresses an appreciation of what is meant by writing and is not simply a description of the process. It is evident from what has just been said that definition implies judgment; and if definition is analysis, then definition implies “analytic judgment.” This means that the predicated part of the definition simply unfolds what is already implicit in the subject—it expresses what is meant by the subject.

There is, however, another form of judgment which adds something to the thing thought about, associates an idea or group of ideas with that (or those) already being thought of. *The pencil with which I am writing has a soft lead*, expresses such a judgment. Such judgments are called “synthetic judgments” for their predicates add to (or unite with) their subjects. For this reason, synthetic judgments are also called descriptive judgments; and analytic judgments are called appre-

ciative judgments. In conception and judgment the mind builds up a world for itself; or rather two worlds, the "world of appreciation" and the "world of description." Neither world is complete in itself.

Having now seen the relation of judgment to one phase of conception, viz., the relation of the analytic judgment to definition, "the pedagogy of the concept" may be taken up.

1. The concept is a product of the reflective activity, of comparison, abstraction, and synthesis. Hence, the teacher should strive to induce in his pupils the mental activities just mentioned. The practical question is, How may this be done?

Under the discussion of invention some suggestions were made that are valuable in answering this question. Also, in the discussion of questioning it was shown that the kind of mental activity on the part of pupils is largely dependent upon the character of the teacher's questions. Moreover, there is something in the general attitude of the teacher—a something extremely difficult to define but all important in the vital process of education. This attitude is impossible without a thorough and enthusiastic knowledge of the thing to be taught, of the way to teach it, of the value of it to the one being taught; impossible without a sympathy for child life and children's interests; impossible without a higher interest in teaching than that of making a living by it. A teacher with all the positive things implied in this series of negations will judge of the value of his work by the amount and intensity of the thinking done by his pupils and the consequent change in selfhood which these imply. Such a teacher is forever inciting pupils to do things for themselves.

2. It should be noted, also, that the kind of thinking here discussed is the kind that has built up all the science the world has ever known. A mere knowledge of facts about plants, or bees, or birds, or number relations, or the solar system, is not science. This knowledge of facts is a necessary basis for science, but science emerges only when these facts are connected by relations which are regarded as essential. Similarly, a knowl-

edge of the facts of history and geography is necessary as a basis for appreciation, but this knowledge is not the appreciation; and no one will deny that this appreciation is the *raison d'être* (reason for being) of the study of these subjects. Pupils should not memorize science; they should think it out for themselves. And, hence, a teacher should so environ the child, so stimulate him by questions and suggestions, and so order and arrange the things he teaches that the child will synthesize the (to him) essentials into a unity. It is only by and through this thinking for himself that the child can ever realize his true nature and become truly social.

3. But, having reached this conceptual activity of mind, the child should at once return to individuals, to images, for he can now see the individual in light of its essential and universal relations. "The more one knows, the more he can see in his daily experiences." A farmer who knows how bacteria aid in the sprouting of seeds sees more in this phenomenon than he who simply knows that seeds sprout. To a cabinet-maker who knows how oak is "quarter sawed," the oak which he uses means much more than to one who works without this knowledge. And it is so always and everywhere, "To him that hath shall be given."

Thus, along with the growth of concepts, comes a saner, truer view of things; the person becomes "mature"; that is, his view of things is no longer that of the child. This maturity can come only through the interpretation of experience in light of its essential relations. To consider the process ended when the concept has been reached is to leave the pupil in mid-air, is to roll stones to the top of a hill only to have them roll down again. Pupils should constantly see more in life, think more independently, feel more nobly, and act more ethically as a result of teaching or else the effort is in vain.

4. The teacher should realize, however, that some things necessary to be taught are not of this conceptual character. Some signs or symbols and some facts must be taught as bases

for thinking. Every concept or mental activity should have its correlative form of expression, and these forms can be acquired only by sheer association. The teacher who realizes this will be able to discriminate, and insist on forms only as they are related to thinking. In general, concepts or meanings should precede their appropriate forms of expression for these latter are, as already shown, highly conventional in character. Imitation is a great factor in development, but not in what is called conceptual development, for the latter is a thing of self-activity in the reflective form.

5. From what has been said regarding "the pedagogy of the concept," it should be clear that the concept is an aid to thinking (for it allows one to think the essentials of the many in one mental act), to the expression of thought (as contrasted with image activities), and to the process called apperception because the concept enables one more effectively to pick out the essentials in a new experience. The teacher can only indirectly stimulate the formation of concepts; he can ask questions, offer suggestions, and give directions which lead the pupil to the process of comparison. No amount of lecturing, no amount of committing to memory can produce concepts. Hence, teachers should confine their efforts to the few really helpful things they can do.

A consideration of "the pedagogy of the synthetic judgment" is now to be undertaken. It has already been seen that this form of judgment adds a predicate to a subject and thus describes it. The practical question is, How may the child be led to perform this mental activity?

1. Imitation is one great way. The mother tells the child that the flower is pretty, is blue, is sweet, etc., and he repeats after her, "The flower is pretty," "The flower is blue," etc. He may have the same idea of the predicate as his mother has, and in this case he is really judging imitatively; or he may have an erroneous idea of the predicate, and in such cases he is probably just going through the form of judging, making the sounds but not the appropriate mental associations.

The process is not much different when the child reads. He may re-think the judgments or he may just repeat the word-sequence. This "short circuit between eye-stimulus and vocal response" is very likely to occur as soon as the child has gained a fair control of the technical phases of reading, and it is one that must be guarded carefully against during all use of books. The sentence of the book should be a challenge to one's intelligence to find the appropriate meaning or idea-equivalent. It is only fair to say, however, that in many cases there is no challenge about it. How many would be puzzled by the phrase, "tea served in egg-shell Spode cups?"¹ The adjective *Spode* is the part that bothers.

This is but a single illustration of what is going on all the time when people read—equivalent idea-realities are not forthcoming; and the habit of slipping over the words can be easily formed. A pupil ran across the phrase, "a lecture on Calculus," and thought calculus to be a man, a philosopher of the time of Socrates.² Unless one gets the proper ideas from the symbols his reading is in vain. In short, the things one reads should serve to stimulate his own processes of judgment.

2. Discovery is another mode of forming synthetic judgments. Modern education is shot through and through with efforts to have pupils discover attributes of things and then form judgments which affirm these attributes of the subjects. In a class in nature study, the pupils examine the object and report their discoveries in synthetic judgments. Something like this is often heard about the dandelion:—

The dandelion grows close to the ground.

It has a yellow flower.

The flower is made up of a lot of little flowers arranged together.

The flower grows on a thin hollow stem.

Any object or process which the children can directly observe is described by means of synthetic judgments.

¹ *The Adventures of Oliver Horn*, pp. 34.

² Perhaps the text was in error in spelling the word with a capital letter.

In such subjects as geography and history, the pupils will form synthetic judgments if the subject is presented orally and according to the developing method. Take, for illustration, this selection from a fourth-grade history class:—

When the women at the fort saw the Indians carrying the girls into the woods, how would they feel?

“They would be scared and sorry, too.”

What would they want to do?

“Tell the men in the fields about it.”

How could they do this?

“Someone could go to the men and tell them.” “They could hang out a white cloth as a sign.” “They could ring a bell or blow a horn.”

It is clearly impracticable that all teaching should be by this method. Pupils must learn to use books. This is readily granted, but may one, even with the use of books, still have this independent discovery of the predicates appropriate to the subjects? May the teacher still secure constructive thinking on the part of pupils? If so, how?

The matter will be treated negatively at first.

(a) Constructive thinking (which includes reflection, discovery, and invention) can not be secured by making memory work seem to the pupil to be the thing he must perform. If literature is being taught, the memorizing of large or small portions of it will tend to centre the attention upon the form rather than upon the content. The memorizing should follow, not precede, the appreciation of literature. In geography, “locative geography” strongly insisted upon and long continued tends away from constructive thinking. Children should know where some places are, but in this alone there is little, if anything, of value. Location is significant only in relation to other qualities or facts about a place. The same argument applies to history, arithmetic, and grammar. This point may be stated in another way by saying that insistence upon form before content is appreciated tends to prevent constructive thinking.

(b) The overwillingness of the teacher to help the child over the difficulties, to put words into his mouth, to suggest the appropriate predicates or modifiers develops dependence in thinking, develops imitation in judgment which, as already pointed out, retards conceptual and judgment development.

(c) The failure of the teacher to apply consciously the principle of apperception in preparation for the new, in comparing the new with what is already known, and in the interpretation of the new, leads the child to master the new as an isolated thing. And this learning of an isolated, unrelated thing demands thinking by contiguity. It is said that no isolated thing can exist in the mind. This is undoubtedly true, but the relation by virtue of which it exists there, may be of any degree of weakness or of strength. Contiguity is weak. "It is the first resort of a weak teacher, and the last resort of a strong one."

Considering the matter positively, some ways in which the teacher may secure constructive thinking may be formulated.

(a) It has already been shown how the teacher may stimulate discovery and invention in pupils. Fundamentally this is done by so adjusting the difficulty of the new thought that the child can overcome it and reach the new thought for himself. In this process the teacher's business is simply to provide the opportunity and afford the stimulus to the child. Before he can do these things in the most effective way the teacher must have organized the subject matter into a series of related parts, and then must ask questions that stimulate reflective thinking. There is no objection to the study of a textbook by pupils before the recitation period, provided the teacher leads them to think for themselves during the recitation. This preliminary study of a book should afford so much material for genuine, progressive, constructive thinking; and the thinking should be more effective in consequence of this advance study of a textbook. But just as soon as the teacher resorts to the expedient of "finding out if pupils have studied their lessons" by asking them to repro-

duce just what they studied, he employs a method that is the reverse of constructive.

(b) Constructive thinking may also be stimulated by making large use of comparison in teaching. Comparison, as already pointed out, is a process of discovering similarities. To the extent, therefore, that the teacher can stimulate his pupils to comparison, to that extent he can provoke or awaken constructive thinking. This idea has taken the form of a pedagogical maxim:—"Learn one thing thoroughly and refer everything else to it." In one way this is impossible, for there is no one thing to which all things can be referred, unless it be a system of metaphysics. A system of metaphysics, however, is, despite some recent efforts to introduce "post-graduate work" into the grades, an impossibility for the pupils in elementary schools. If, however, the maxim means:—"Learn one thing thoroughly and learn all similar things by comparing them with it," it is perfectly valid. For illustration:—Study North America as a continent and then study other continents by comparing them with it; study one method of mining in great detail and other methods by comparison; study one campaign of the Civil War in its causal relations and other campaigns by comparison. This process is not only a time-saver; it is a thought-producer.

(c) Another thing that will tend to stimulate constructive thinking is proceeding as slowly as pupils can think. Schools have, in some measure, caught the "get-rich-quick" fever. There are ever so many more things to teach than there were a few years ago, but there is no more time in which to teach them. Hence, there is constant pressure and haste. Teachers, perfectly familiar with the thinking their pupils are performing for the first time, are inclined to forget or underestimate the difficulty, and to "push the child along." In reality, such pushing is "pulling the child back," for by it his attention is distracted. Continuity of attention is the *sine qua non* of constructive thinking. The teacher who asked his pupils seventy-seven questions

in ten minutes rendered constructive thinking impossible during that period.

(d) Finally, a frank, sincere, sympathetic, appreciative attitude of teacher toward pupil will prove a powerful stimulus to constructive thinking. This attitude is that which gives the child the sense of freedom, gives him the feeling that whatever he may have to offer will be respected and not be "laughed out of court." This attitude is genuinely free from any taint of sarcasm or ridicule, is genuinely honest and honorable. The child does not analyze the influence of this attitude upon himself—he simply feels it. He feels no trace of fear, does not "hate to recite," and enters into school work with the same spontaneous enthusiasm and zest with which he coasts or skates. Without this attitude of both teacher and pupil all skill is but a makeshift.

Synthetic judgments are formed by the child either by a process of imitation or by a process of discovery; and discovery implies constructive thinking. Through the process of judgment the child comes to know the truth; and it is this knowledge of the truth that makes him free. As he grows in knowledge of the truth the child inevitably comes to form opinions for himself. He forms opinions of things, events, relationships, social practices, the worth of himself and others. This opinion-making is simply the synthetic judgment by which the child imposes his standards of value upon his own ideas, and by which he associates together the ideas which he has already acquired.

In this process of opinion-making the child is unconsciously influenced by the opinions of those with whom he associates. The reason for this is not difficult to analyze. The child gets most of his system of values by unconsciously appropriating the values of others as he hears them and sees them expressed. Invention is possible and accounts for the gradual change of what we call public opinion. The child, however, changes his opinions largely because of the opinions of those with whom he associates. How much of annoyance teachers have endured simply

because the "bell ewe" of their flocks has whispered it about that the "teacher is simply a horrid old thing!" And how much of adoration and devotion they have received because it was noised abroad that "the teacher is just fine!"

And yet there comes a time of relative independence in opinion-making. This independence implies a relative maturity, and has a considerable value in development. Independence in thinking does not mean thinking as no one else thinks; it means thinking for one's self. It demands that one shall get all available data and carefully consider it bit by bit before making his judgment. Independent opinion-making is a unifying, organizing activity. The teacher's function with respect to it is three-fold, viz., (1) leading the child to build up worthy and adequate standards of judging, or standards of value; (2) influencing the child so that he desires to get all available data regarding a given subject, object, or topic; and (3) building up within the child a habit of considering carefully all the data before forming his opinions.

Opinion-making is a judgment as to the worth of things while what is ordinarily called judgment affirms an attribute without any relation to its worth (and this is true whether the judgment be analytic or synthetic). But, in a sense, all analytic and all synthetic judgments are simply so much material in terms of which one pries into the worth of things. It is not a knowledge of the attributes, qualities, and forms of things, nor yet an appreciation of their meanings by one that influences his conduct; rather one's appreciation of the worth of things for himself and his appreciation of the worth of things for others influences, yes, determines his conduct. And opinion-making is the initial stage in the process of building up one's view of his relation to the universe.

C. Causal thinking and the formation of personal attitudes.

In studying the formation of concepts it was seen that the child synthesizes elements regarded as essential. Judgment

refines and purifies these concepts, makes them flexible, and gives them an additional worth. Inevitably the child comes to appreciate the fact that all things change, that all things are dynamic. Back of all this flux and flow of changes there must be a something, or some things. These somethings are called forces, or causes. The child's first idea of cause or force is of the image type, is concrete; but gradually he comes to form genuine concepts of certain forces or causes. Gradually he forms concepts of heat, steam, electricity, magnetism, chemical affinity, gravity, etc. Having reached these concepts, the child is able to explain certain phenomena in causal terms, he is able to understand things in their dynamic relations. He sees that iron sinks in water and that cork floats in it because of the different intensities of the force of gravity upon bodies of different densities. He sees that gravity, heat, the earth's rotation, and surface features control cyclonic movements. The child comes to appreciate the principle of the barometer and understands how it may be used to measure the height of mountains. He studies into the causal relations of the compass and appreciates its value to the mariner. The whole realm of inanimate nature takes on a new meaning as the child comes to see great world-forces behind phenomena that formerly seemed to him to be governed by chance; and the whole realm of human adaptation to inanimate nature becomes as entrancing as a fairy tale.

But this force-world, in order to be of greatest service to men, must be controlled and measured. Machines are human means of controlling these forces and of measuring them. Control is qualitative, or descriptive; measuring is quantitative. And in this distinction there is vast significance for the teacher in the elementary school, for the child in the grades is interested in the qualitative aspects of causes and not in their quantitative aspects. He may be interested in the action of the barometer as connected with his weather observations or with the adventures of explorers; but it is almost impossible to interest him in the corrections necessary to the exact reading of a barometer.

He is interested in knowing that iron expands when heated, but not in finding "the linear co-efficient of the expansion of iron."

Even older pupils balk at the determination of the quantitative phases of these great world-forces, for they fail to see just where this exact, quantitative knowledge exerts any power on their individual lives. With older scientific students the case is different for they can see the bearing of this ability to determine accurately the quantitative phases of forces upon their future successes. In short, the relation of the qualitative aspects of forces to their utilization by men is more easily apprehended than is the relation of the quantitative aspects of these same forces.

Confining now one's attention to the needs of pupils in the elementary schools, it is evident that the teacher should strive for: (1) fairly distinct concepts of these various world-forces based upon the inductive examination of them in operation either as they are in nature or as they are conditioned in simple qualitative experiments; (2) a wide interpretation of natural facts and human adaptations to natural facts in light of these concepts. Pupils in the elementary school have too little ability in manipulation, too little of motor control, to secure results that are valid as bases for quantitative determinations; and also, they have no equipment, either in interest or in mathematical ability, adequate to an educative determination of the quantitative laws of forces. The greater value lies in appreciation of these forces as related to life, in appreciation of the various ways in which men utilize world-forces for their own benefit.

And there is ample opportunity in elementary school work to exercise pupils in this kind of thinking. Nature study is rich in materials; so, too, geography. The study of industries, which is constantly increasing in one form or another in schools, also offers an excellent field for this highly valuable form of thinking. The best teaching of history is that which emphasizes the causal element. The cause, or force in history, however, is usually human motive rather than inanimate force, and

hence, even its qualitative results can not be accurately predicted; the qualitative results of historical forces can be predicted merely as possibilities. But the attitude of mind which seeks to grasp the causal idea and to predict its effects is the attitude of well-balanced independence—an attitude so genuinely serviceable that it should not be omitted from elementary education.

These world-forces, however, are not the only forces which the child understands. He finds himself related to them, dependent upon them and limited by them in many ways; but within himself there is developing a sense of his own power of adaptation to these forces. The development of this sense gives rise to the formation of personal attitudes. The child sees others controlling these forces, limited by them, and even controlled by them, and so the question as to what he is to do arises in his consciousness. His knowledge is not wide enough to enable him to give to this question an answer having the highest validity; but he does give it some sort of an answer, and, in so far as he is able, he strives to live out his answer in personal attitudes.

The formation of genuinely serviceable attitudes is the essential end of the educative process; all things else are but means to this end; this is "the last, for which the first was made." To build a conceptual order, to unmask things and discover their real nature and relationships, to know the meanings of things—these are great achievements indeed; but they are "as sounding brass and a tinkling cymbal" if, using them as so many stepping stones, the child does not, of his own initiative, get into right relations with Nature and with Man.

D. Logical thinking and systematization.

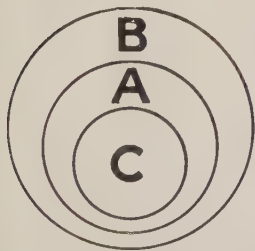
In all of the child's causal thinking the real nature, or essence, of force eludes him. Force is known only through its manifestations, its ways of behaving; and there is always a possibility that it may behave differently. To illustrate:—All the iron one has ever heated, or heard of being heated, has seemed

to respond to heat by expanding. There might, however, be a piece of iron so tempered or heated or electrified that further heat applied would not cause it to expand. If there were such a piece of iron, it would behave so differently from what one has previously called iron behaves that he would hesitate to call it iron. But, assuming that iron expands when heated, any particular piece of iron *must* expand when heated—it is necessary that it should do so, for expanding when heated is an essential mode of iron behavior. Just what heat is in its essence no one knows; nor does anyone know the “true inwardness” of iron except in so far as he assumes that its behavior under different circumstances is a revelation of its essence, or nature. But, granting these things about iron and about heat to be true, one can predict with absolute certainty what iron will do when heat is applied to it—yes, what iron *must* do.

Take another well-worn illustration:—

- (1) All A is B.
- (2) All C is A.
- (3) \therefore All C is B.

If all A has a characteristic called B, and all C has the characteristic called A, then *of necessity* all C *must* have the characteristic called B. All C may indeed have many other characteristics, but this characteristic called B it *must* have.



One may illustrate this necessary relation by a diagram. Since all A is B this relation may be expressed by putting all A as a circle within the circle B. It is also true that all C is A, and this may be expressed by putting all C within the circle A. Speaking simply in terms of the diagram, if C is within A, and A is within B, then C is of necessity within B. The thought necessity is, of course, merely symbolized by this arrangement of circles.

Suppose now that the second proposition were, “All C is

B." Where should the circle be drawn to show this truth? Anywhere within the circle B; but one can not tell whether it should be so drawn as to overlap A. And what conclusion can be drawn from the two propositions?

- If (1) All A is B,
and (2) All C is B.
then, (3) (a) All C may be A.
(b) Some C may be A.
(c) All A may be C.
(d) Some A may be C.

These conclusions express possibilities, not necessities. Still, the possibilities are, as a whole, inevitable or necessary from the given relations.

Take another illustration and draw the circles for yourself.

(1) All X is Y.

(2) No Z is Y.

(3) \therefore No Z is X, and no X is Z. The conclusions are both necessary.

It is not the purpose to treat of this matter as do the books on logic; rather, it is to show by means of these simple illustrations what is meant by logical thinking. Whenever and wherever the mind reaches conclusions because of the relation of necessity between the terms of separated judgments, we have what is called logical thinking. To make this perfectly clear, consider an absurd illustration:—

(1) All true gentlemen curl their hair.

(2) Mr. Doge does not curl his hair.

(3) \therefore Mr. Doge is not a true gentleman.

Grant the truth of the first two propositions and the third is necessarily true. Logical thinking thus reveals the necessary relations among judgments.

Since logical thinking has the function just assigned to it, it is evident that as an explicit phase of consciousness it develops later than does any one of the mental activities which have been discussed in this chapter. In its implicit aspect, however, it reaches

down into almost the simplest mental processes. Logical thinking is present in the perception of any object. The syllogism of perception is as follows:—

(1) All objects that affect me in the ways x , y , z , etc., are called oranges.

(2) The object now before me affects me in the ways x , y , z , etc.

(3) Therefore, the object now before me is an orange.

Logical thinking is present in memory, and under this syllogism:—

(1) All mental activities which have a certain peculiar warmth and feeling value I call memories.

(2) My present mental activity has this certain warmth and feeling value.

(3) Therefore, my present mental activity is a memory.

All inductive reaching of conclusions has this logical thinking implicit in it. In inductive thinking use is made of the so-called "principle of the uniformity of nature," by which is meant that whatever is found to be true of several individuals selected from different and typical relations to other things, is also true of all objects of that class. For illustration:—One finds that several thistle plants growing in different kinds of soil bear flowers only in the second season of their growth. If nature is uniform in the sense explained above, then all thistles bear flowers only in the second year of their growth. But the individuals thus selected may not be typical ones. For illustration:—A boy has learned by genuine experience that the teachers who have taught him were cross and unfair. Relying, perhaps unconsciously, upon this principle of uniformity, he concludes that all teachers are cross and unfair. His experience has not been sufficiently typical to warrant the conclusion, to give it the validity of necessity for all men.

As the child grows in power of judgment and in power of reflection, he gains the power to make this element of necessary relation an explicit thing in his consciousness. Ordinary

courses of instruction recognize this and include materials which can be mastered only by logical thinking. Mathematics has long been regarded as the best means for the development of "logical thought;" and the classic languages and the grammar of the mother tongue have been regarded in the same way. In elementary schools arithmetic and grammar are taught. It may be profitable to trace out how these subjects afford opportunity for logical thinking.

Arithmetic has long been held in high esteem because the problems which constitute so large a part of it demand for their solution the perception of certain relationships which are not evident from the simple statement of the problem. The value of the study lies in this perception of relationship and the applicability of similar relationships to practical, everyday affairs. It is worth while to examine a few typical problems, beginning with very simple ones, to find the logical thinking involved in them.

"If an apple costs $2\frac{1}{2}$ cents how much will four apples cost?"

It is assumed that each apple costs $2\frac{1}{2}$ cents, for without this assumption no one could tell the cost of four apples until after he had bought them. Assuming this, the reasoning has the character of necessity as the following propositions show:—

- (1) One apple costs $2\frac{1}{2}$ cents.
- (2) Four apples cost four times as much as one apple.
- (3) Therefore, four apples cost four times $2\frac{1}{2}$ cents, or 10 cents.

Take the problem which is the reverse of this one.

"If four apples cost 10 cents, what is the cost of each apple?"

Again it is assumed that each apple costs as much as every other. Granting this, one can easily arrange the propositions to show the relation of necessity:—

- (1) Four apples cost 10 cents.
- (2) One apple costs one-fourth as much as four apples.
- (3) Therefore, one apple costs one-fourth of 10 cents, or $2\frac{1}{2}$ cents.

Consider a more complicated problem.

"A, owning $\frac{3}{4}$ of a mill, sold $\frac{1}{3}$ of his share for \$4,500; what is the worth of the mill?"

A sold $\frac{1}{3}$ of $\frac{3}{4}$ of the mill, or $\frac{1}{4}$ of the mill, for \$4,500.

(1) $\frac{1}{4}$ of the mill is worth \$4,500.

(2) $\frac{1}{4}$ of the mill is worth $\frac{1}{3}$ as much as $\frac{3}{4}$ of it is worth.

(3) Therefore, $\frac{1}{4}$ of the mill is worth $\frac{1}{3}$ of \$4,500, or \$1,500.

Here begins another series of propositions, as follows:—

(1) $\frac{1}{4}$ of the mill is worth \$1,500.

(2) The whole mill is worth forty times as much as $\frac{1}{4}$ of it is worth.

(3) Therefore, the whole mill is worth forty times \$1,500, or \$60,000.

In ordinary analyses of such problems not all the propositions are set forth with the fullness given here; but one's thinking includes all the steps by which the necessary relations are discovered.

Enough illustrations have been given to show that the solution of arithmetical problems demands logical thinking. The facts of addition, subtraction, multiplication, and division do not require this kind of thinking. No matter how well one understands the fact that 2 and 2 are four, he can give no reason for it except that is it so. And, understanding the facts of these four fundamental processes, the sooner they become habitual in their symbolical form the better for the child. Such a thing as this, "Multiply 7,684 by 287 and divide the product by 593," is no genuine problem; it is simply an example. It simply

means:—
$$\frac{7,684 \times 287}{593} = ?$$
 One speaks of "working examples" because he does by habitual processes all that is required. One speaks of "solving problems" because he transforms them into examples by getting the necessary relations by means of logical thinking.

In consequence of this character of arithmetical problems

it is seen that the popular estimate of the value of arithmetic is based upon valid grounds. If this logical thinking in mathematics could insure that one would manifest it in all his thinking about other things, then, of course, all should be forced to submit to its rigorous discipline. But training in mathematics has this wider value only to the extent of "serviceably associated habit." A man might take highest honors in mathematics in his school and college course, and then be induced to pay a foolishly exorbitant price for the right to sell a "patent end-gate for wagons" in a county devoted to grazing, or for the exclusive right to sell photographs of John Brown in Manchuria. If, however, the habit of thinking logically is extended to include other things and relationships than those of mathematics, it should be based upon these other things so that it may have the greatest value.

One can also now see why arithmetic has lost its former prestige in elementary schools. Just to the extent that teachers have succeeded in organizing other subjects of the curriculum into a series of problems demanding the perception of necessary relationship between judgments (or even *probable* relationships), just to that extent has it been less necessary to spend so much time on arithmetic. History, when taught by the method of memorizing the textbook, had little value; but as it is now taught in the best schools it requires a kind of thinking closely allied to logical thinking. The same is true of geography. Locative geography, map questions, map drawing—if made the chief things in geography work—have a relatively low utility in genuine development of mental power; but when geography is taught in its causal connections, as a series of problems, it has an extremely high value as a means to the development of efficient social individuals.

It can also be seen why arithmetic is hard for some pupils. Either they are so impatient for results that they "emulate the activity of the beheaded hen," or else they have no power to detect necessary relationships between the quantitative data

given and those required. This latter difficulty is usually the result of an error of teaching. The teacher allows or encourages the pupil to attack problems as he attacks examples—mechanically. That this has been the teacher's practice is shown by the marvelous answers pupils report for "miscellaneous problems." And the arrangement of many textbooks—twenty-five or thirty problems together requiring the same kind of solution—is a thing that fosters this mechanical work in arithmetic.

The subject of English grammar will now be examined to see what opportunity it affords for logical thinking.

Whether grammar be taught by the method of memorizing definitions or by the method of inductive development, the application of these definitions to sentences is an element that has great value. This application of definitions to sentences is either a valueless guess or else it is logical thinking. Take a sentence and analyze the answers to questions that may be asked about its parts.

"The early bird catches the worm."

Why is this a sentence?

"It is a sentence because it expresses a thought by means of words."

If one analyze this answer he will find the propositions:—

(1) A sentence expresses a thought by means of a series of words.

(2) This series of words expresses a thought.

(3) Therefore, this series of words is a sentence.

What part of speech is *early*?

"Early is an adjective." Again one finds:—

(1) Any word that names a quality of a substantive is an adjective.

(2) *Early* names a quality of the substantive *bird*.

(3) Therefore, *early* is an adjective.

What is the relation of the word *worm* to the verb *catches*?

"*Worm* is the direct object of *catches*." Again, the reasoning is:—

(1) The word which names the object upon which an action expressed by a transitive verb terminates is a direct object.

(2) *Worm* names the object upon which the action expressed by the transitive verb *catches* terminates.

(3) Therefore, worm is the direct object of *catches*.

These illustrations show that one phase of grammar demands logical thinking. The opportunities for this same kind of thinking appear to a wonderful degree in the study of Latin. Someone has said, "Caesar is little more than an excellent drill in the rules of the subjunctive." It most certainly could be taught in such a way that this would be true of it. Old men extol the values of parsing every word of *Paradise Lost*, because in parsing, the possible variations of the form of the word are all set out; and this process is either sheer memory or else it is the application of a rule or principle by means of logical thinking.

Allusion has already been made to the change that has come about in the methods of teaching grammar. If definitions are merely memorized from a book, the pupil can do nothing but guess. It is realized that "memorized grammar" is not worth the effort it costs, and in its stead teachers have put an inductive examination of the functions of words in sentences. It is also realized that the logical thinking demanded in grammar is too difficult for pupils in the fourth and fifth grades, and difficult enough for pupils above these grades. Gradually there has come a division of the subject into language and grammar. Habit is all powerful in language but not in grammar. The child is equipped with correct language habits in the lower grades, and to the higher grades is left the examination of the necessary relations and functions of words in sentences.

Logical thinking has another relation to the process of education. It has already been seen how personal attitudes are formed. Back of these personal attitudes which the child forms are judgments which have certain necessary relations to each other. The progressive appreciation of these necessary relations is the process of systematization. The child begins to realize that if

certain things are true then certain other things must necessarily be true. This realization of necessary truth is not confined to arithmetic and grammar—there is a logic of life. This logic of life usually appears in a mild form before the child has finished the elementary school, but it never is completed therein. It demands a wider range of experience than the schoolroom can ever give. Secondary schools, colleges, and universities equip one with knowledge and suggest systematization, but a systematization that is formed without the actual experience of making one's way in the world has little value or potency.

The teacher in the elementary school has two distinct functions with respect to this tendency in his pupils to form a philosophy of life, viz., (1) to guard them against the formation of a vicious one, and (2) to suggest to them, by and through his own philosophy of life as exemplified in his daily conduct, a sane, wholesome, social, serviceable, ethical view of life. It is not wise to impose a philosophy of life or a logic of life upon pupils, for the whole value of such a view of one's relation to the known universe and of the relations of one section of the universe to another lies in the logical, progressive, constructive thinking by the individual himself. It is this appreciation, and not imitation that has validity. Suggestions and questions to awaken thoughts about these high things are in place in schools, but a set solution of them, to be learned imitatively by pupils, is a prostitution of the influences of a public educational system. Authority may prevail in some conditions and, under certain circumstances, in all conditions; but, in the intellectual apprehension of the logic of life, the great thing is for each person to think for himself. This will not produce chaos; rather it will produce the only intellectual unity that is serviceable at all—the unity that forever seeks for higher and better things.

SUMMARY.

In these long and highly analytic chapters on *Stages of Knowledge and Stages of Instruction*, two things have been

attempted, viz., (1) an analysis of the chief stages in development of the knowledge process; and (2) a consideration of the demands made upon school instruction by the nature of these stages. Knowledge becomes progressively more and more ideal,¹ for it begins in bondage to sense impressions and ends by systematizing all known science and feelings into a consistent view of the universe and of the individual's relation to this universe. The progressive character of knowledge therefore demands that the teacher (1) stimulate, exercise, foster the stages of knowledge ascendant at the time, (2) conserve all the truly valuable elements of the stages that have already appeared, and (3) stimulate, at the proper time and in the proper way, the stage of thinking which will (*a*) increase the significance of the knowledge already acquired and (*b*) unfold to the thinker a new and higher view of reality. These demands should be met by the teacher who, of course, uses the course of study, the discipline of the school, and his own personality as means to the realization of these clearly conceived ends.

¹ Dewey's *Psychology*, pp. 83, 84.

CHAPTER XIII.

CLASS INTEREST AND ATTENTION.

§ 52. INTRODUCTORY AND DESCRIPTION.

It should now be perfectly evident that, whatever be the stage of selfhood or of knowledge of the pupil, whatever be the process by which he has reached his present level of development—it should be perfectly evident that future development depends for both its direction and intensity upon the present emotional and volitional attitudes of the child. Emotional attitude includes all possible feelings of the child, and these feelings are usually projected into objects, events, relationships, etc., so that the child is said to fear the dark, love the flowers, etc. When this projection, or objectifying, has once taken place, one can get at will the feeling by assuming the appropriate motor attitude toward the object, event, relationship, etc. This establishing of a motor attitude toward objects, events, relationships, ideals, institutions, etc., is volitional attitude.

These terms, *emotional attitude* and *volitional attitude*, are too broadly generic to describe certain emotional and volitional attitudes that are of vital concern to the educative process, and, hence, two other terms are used, viz., *interest* and *attention*.

Interest (literally, *he is between*, or *among*) was first used to describe the physical attitude of one whose mind was, so to speak, *lost in an object*—whose mind seemed to be *in* the object. Then interest naturally came to be used to describe the mental attitude of one who was thus lost in an object. Interest is the *felt value* of a stimulus (be it flower, ideal, institution, theory, or what not) for the self that feels it—the felt worth of

an object. If one believes that a thing has, inherent in it, the power to make his life more satisfactory, he is interested in that thing. This is simply saying that the self is originally so constituted that it seeks certain satisfactions, because of certain felt needs.

Not all these needs are felt with equal clearness, and many of them are largely organic, as hunger, thirst, stretching, etc. These organic, or physiological, needs are the basis of many of the random movements of young children. What has already been said of reflex, instinctive, and impulsive movement in another connection may be interpreted in terms of need and interest. So, too, the so-called stages of mental activity take their rise in the felt needs of the child. This felt need may arise in the child because of an hereditary, or natural, organization of the self, or it may arise from an organization of the self that has been brought about through the reaction of the self to some stimulus or other. There are, therefore, two kinds of interest, the natural and the acquired. Acquired interest always and of necessity rests ultimately upon natural interests.

The mere process of living, of adjusting one's self to any kind of environment whatever, develops interest. But it is a well known psychological fact that if a stimulus be repeated with equal intensity at intervals, it ceases to be felt, or is felt in diminished intensity. One becomes accustomed to the ticking of the clock, to his friend's peculiarity of speech and manner, to the hum of the schoolroom, etc., and does not notice them. Let them cease, however, or change, and one notices them at once. Uniformity of environment tends thus to make one unconscious of it, and thus to deaden interest. But people do not entirely lose interest in these things as the longing for the old-time environment clearly shows. Active interest in an environment is thus seen to depend upon those adjustments which have a felt value; and the value will be more keenly felt if there is enough variety to call out new needs as those already felt are satisfied.

Habit in adjustment is thus seen to be the point at which interest subsides. The organization of self which is effected by habit becomes the basis for a new need. This new need may be so clearly felt of itself that it sets up a new interest, or it may require the suggestion of a teacher or of a social situation to bring it to the point of clear consciousness. That is very artistic teaching, indeed, in which the pupil, in response to the teacher's question, sincerely says, "That is just what I want to know." Whenever a pupil really wants to know, he is ready to learn, ready to put forth effort to find out, and genuinely to develop. When, however, a pupil does not want to know—is *blasé*—he may, it is true, be forced to learn, but it is doubtful if this forced organization of the self is really serviceable.

Attention is really *a tension* (literally, *a stretching toward*), is the motor attitude of adjustment that inevitably arises from interest. Attention is also self-direction as when an end, whether interesting or not, is chosen and the activity necessary for its realization is put forth.

Attention, then, is simply the adjustment of the self to a stimulus either because of an inherent, or because of a self-determined, worth in the object. Even the Puritan, whose ethical code was, "If a thing is disagreeable and you do not wish to do it, you should do it anyhow," had so organized himself that he really got more satisfaction from doing disagreeable things than he would have gotten from doing the agreeable ones.

There are, then, two kinds of attention, viz., involuntary attention—that adjustment of the self to a stimulus which arises without any sense of effort; and voluntary attention—which is the self-determined adjustment to a stimulus. Great power of voluntary attention is usually looked upon as desirable, but it is always a derived thing and is based upon those ideas which have been acquired by previous acts of attention; and ultimately, these ideas go back to those initial ones that have come through involuntary attention. Just as random, reflex, instinctive, and impulsive movements furnish the basis for, and determine,

voluntary movements, so that organization of the self which at first arises from natural interest determines the later organization that may be brought about by voluntary attention.

The mind attends with its ideas; that is, the present organization of the self (the resultant, in large part, of its previous activities) determines whether or not the self can adjust itself to the present stimulus. Hence, the more one knows about any subject or object, the more can he attend to it, provided his previous activities have not exhausted the range of (to him) possible adjustments; the less one knows about it, the less can he find in it. Knowledge is a controllable organization of the self, and, hence, generally means that the self shall have functioned more than once in a particular way. This refunctioning in the same way is incipient habit and brings about a controllable organization of the self. It is this structural organization of the self, whether controllable or not, with which the mind attends.

Therefore, it is said that, in order to keep attention functioning, the object must change. With young children this is true, for the self of the child functions largely in response to suggestion. But when there is that organization of the self which is called maturity, the self can adjust itself in various ways to the same stimulus or object. The change of self adjustment is the same in its psychological effect as would be a change in the object itself.

In a deeper sense, the real object for the mind is not the external thing at all, but is just this activity of internal adjustment. As has already been seen, the repetition of an activity with the same degree of intensity tends to produce a subsiding consciousness—moves toward the unconsciousness of habit as its limit. And so, the maintenance of attention, with the maximum of consciousness along with it, demands a change in the adjustment of the self.

What is called reflection is nothing but this process of internally initiated and exhaustive self adjustment to a stimulus or situation. It is opposed to impulsiveness, which is a sort of

blind, random, chance adjustment. The reflective person passes possible adjustments of the self to the situation in review and decides upon their relative worth for the self. This reflective process often leaves one in doubt as to the relative worth of possible adjustments, and, hence, the reticence or non-activity of many reflective persons. And so, while reflectiveness, as a quality of mind, is desirable, it must have coupled with it that sense of responsibility which does identify the self with a possible adjustment as worth while, and then proceeds to action.

The unity of interest and attention in their relation to the work of education should now be clearly before us. It may have been inferred that, in outlining the aim and the materials of education (Chapters II. and IV.), a fitting of the child to the subject matter, or the acceptance of an external criterion of value was favored. The contrary is true. The subject matter is to be fitted to the needs and capacities of the child; the child himself is the criterion. But this must not be interpreted to mean either that the present interest of the child should control the selection of the subject matter, or that the wrong acts of the child should go unnoticed and unpunished. The whole process of education implies the influence of a person or thing upon a developing mind—influencing it by example, resistance, compliance, command, suggestion, or question. Hence, all of these devices may legitimately be used by the teacher to arouse or to form a felt need, or to set in motion that activity which will satisfy an existing need. That activity of the child which is initiated by an anticipated felt worth is the most educative.

§ 53. THE RELATION OF ATTENTION TO THE FORMATION OF THE SELF.

The preceding section, together with the analysis of the ways in which the mind learns (Chapter V.), enables one to see that (1) whenever attention exists some reorganization of the self inevitably occurs; (2) whenever organization of the self occurs attention accompanies it. If apperception is the process by

which the mind learns more and retention the process by which the mind becomes more,¹ attention is the necessary condition of progressive apperceptive and retentive organization of the self.

The formative influence of things to which one does not consciously attend is great, but such things are accompanied by or occur in the medium of involuntary attention, viz., the unchosen, responsive adjustment of the self to a stimulus. Such organization of the self occurs through the unconscious imitation of the teacher by the pupils, the influence of the decoration of the schoolroom, the unconscious growth of ideals of conduct through social participation, etc. While this aspect of organization is important for the school, the school is essentially a place in which the effort is to form pupils by having them consciously attend to certain things.

The momentary, pulse-like character of voluntary attention that does not proceed out of interest, demands that the school shall be so organized that pupils wish to do what the teacher wishes them to do. If, as has already been pointed out, interest is necessary to continuity of attention, the maximum of educative effort can exist only when the subject matter is so organized that the pupils find new needs constantly awakened by their efforts to satisfy those which they now feel.

If Baldwin's view of apperception be accepted, viz., the synthesis of mental data into higher forms of unity, it is clear that the ease and readiness of this synthesis is dependent upon the consciousness-intensity of the data thus synthesized. This consciousness-intensity, or vividness, is proportional to the intensity of attention. Apperception is therefore conditioned by attention. An apperceptive act that occurs with a maximum of attention is thus retained longer than one that occurs with a minimum of attention. People remember their school escapades so vividly and their lessons so imperfectly for this reason. And this shows that a maximum of attention produces maximum retention as well as maximum apperception.

¹ Dewey's *Psychology*, pp. 85 ff.

Summing up the section:—The effective, permanent organization of the self is dependent upon the intensity of the attention preceding or accompanying the activities of the self, and the intensity of the attention is dependent upon interest.

§ 54. WHAT CLASS INTEREST DEPENDS UPON.

Turning now to the problem of class interest, there will be but little difficulty in analyzing it out.

(a) If interest be felt worth, what is taught is evidently one element in determining class interest. Pupils in the first grade can not answer to the stimulus of the binomial theorem with the feeling of interest. Felt worth is wholly subjective, and to arouse it the stimulus must connect with an already developed organization of the self. Because the memorizing of the catechism did not thus connect with the nature of the child, it has always been a deadening rather than an educative activity.

Adult society has always felt the need of transmitting to its young, its own body of knowledge, skill, and culture; but it has often been guilty of trying to force upon children a view of life to which there was no answering sense of need—no basis in interest; and often, too, this foreign view of life has been presented from its form side with no effort to acquaint children with its content. It is true that children should grow into men and women, but it is no more true that they become men and women by gaining the vocabulary of adults than it is that a little girl of eight in a long skirt is a woman.

What is taught, then, must answer to a sense of need (native or acquired). But it must also awaken new needs so that there may be a progressive impulsion to new things.¹ And this progressive impulsion should be towards adult interests, attitudes, and ideals. The recent changes in the curriculum of the elementary school have been in the direction of organizing it in such a way that it progressively answers to the shifting capacities

¹ Dr. Grant Karr says: "Education is growth into better things."

and interests of children and also in the direction of including those things which make for genuine socialization.

(b) Implicit in what has just been said is the truth that interest also depends largely upon the way in which the things of the curriculum are taught. Since every content has its expressive form, there are two generic methods of teaching, viz., that which proceeds from form to content, and that which proceeds from content to form. The first of these methods—from form to content—relies chiefly upon memory and the associative process. The second method—from content to form—relies chiefly upon constructive thinking and the associative process. The associative process is always necessary to the establishment of that permanence of structure which is necessary to any high degree of constructive thinking.

If method be looked at from the point of view of the degree of activity of the self-initiated type that is called forth by it, we find that there is an active and a passive method of teaching, a method that throws the burden of thinking for himself back upon the child, and a method that assumes to do this for the child, leaving him simply the memorizing of the forms by which this thinking is expressed.

Or, looking at the concept as the final form toward which all knowledge should tend, we have an inductive and a deductive method of teaching.

Whatever words are used in describing method, it is evident that interest develops the pupil's self-activity and also that self-activity develops interest. Interest may and does follow from any real activity of the self, but it dies out if a child is urged to discover what he can get only by imitation, or to imitate what he ought to get by discovery. This is why grammar and history taught by the memorizing process soon lose interest.

There are, as has been seen, as many valid methods of teaching as there are valid ways of learning. Some things can and should be learned by one process, and some by another. It has been seen, too, that there is a difference in the degree of self-

activity in imitation, discovery, and invention. For pupils in the elementary school, imitation is at a maximum when they enter and decreases as an interest-exciting activity as advance is made through the grades. The reverse is true of discovery and invention. Interest, therefore, demands that the method of teaching be in harmony with the ascendant way of learning. Method, then, is not a foreign or formal way of bringing the child and the subject matter together, but is a process by which the teacher, in ordering the stimuli that play upon the child, conforms to the nature of the child and of the subject matter.

(c) The personality of the teacher—There is, however, over and above method in the sense here used, an element which influences the pupil's interest and which arises from the personality of the teacher. This element is exceedingly difficult to analyze and describe because it is so individual and subtle. The enthusiasm and sincerity of the teacher, as these are revealed in his attitude toward the work of the school and toward the pupils, seem, by a process of unconscious suggestion, to become elements of the attitude of the pupils. This power of inspiring others with one's own attitude is the indefinable secret of great teachers and great leaders of men.

§ 55. UPON WHAT CLASS ATTENTION DEPENDS.

Having seen that class interest depends upon what is taught, how the teaching is done, and the personality of the teacher, the things that determine class attention should be considered.

(a) In light of what has already been said, it is evident that class attention depends upon class interest. This class interest means, essentially, that each member of the class has an interest similar to that of every other member. It is this genuine "community of interests" that really makes a class from what would otherwise be an aggregation of individuals.

(b) Then, too, there are certain laws of attention to which the teacher's efforts must conform if the attention of the class is to be maintained. All sorts of sensory stimuli have a tendency

to attract the attention to them and thus to interfere with class attention to the thing in hand. There must be sufficient change to keep up the attention and yet time enough for each individual to think for himself. A too rapid progress means either imitative or superficial thinking. Then, too, a certain indefinable amount of repetition is necessary to the right ease and readiness of attention.

(c) Along with these purely subjective conditions is the objective one of the motor attitude of both teacher and pupils which operates by suggestion and by the tone which it imparts to the mind. A lazy, slouchy teacher will find his pupils lacking in attention. The lounging on desks and chairs, the dragging of the feet, the "circular" spine, are physical attitudes that influence the emotional attitude of pupils and teacher alike. The contrary motor attitudes have, of course, a contrary effect. The larger use of motor activity now made in schools is productive of a more energetic tone. The use of gymnastics as "dissipators of fatigue" is commendable, but over and beyond this is that motor attitude of vigor that should key both teacher and pupil to the task before them. This motor attitude comes from co-operatively wrestling with a problem.

(d) But, since the teacher is the one who directs the pupils' attack upon the problem, who indicates the advance and the retreat and summary, and who controls, in a way, the problems that shall be attacked, much of the matter of class attention depends directly upon the technique of the teacher's questions and directions. The value of a direction or a question is measured by its effect in arousing the child's thought. Teachers should therefore make a study of the effects of questions upon the minds of pupils.¹

(e) And, finally, the class opinion of the teacher has much to do with the genuineness of class attention. Some teachers who have selected material that is interesting to the class, who

¹ The whole of the section on questioning, pp. 151 to 179, has a close relation to this topic.

observe the laws of attention, who insist upon the right motor attitudes, and whose questions are skillful find, after all, that the attention of the class is spasmodic and uncertain. This result may be due to ill health or to defective physical conditions of pupils, but is more frequently due to the fact that the pupils do not respect the teacher. Respect lies at the basis of all right attitudes of pupils to teacher, and pupils do not long respect anything which is not of true worth. A wholesome, genuine personality is thus the first requisite of a successful teacher. Having this, other things may be added to it; but lacking it, all skill and technique are in vain.

§ 56. PARTICIPATION THE REAL SECRET OF CLASS INTEREST AND ATTENTION.

One is interested in and attends to that in which he finds himself. The degree of self-activity is the measure of interest and attention. Activity, not passivity, is the law of mental life, and activity means participation in things. Participation implies a constructive, coöperative activity. In a way, this constructive, coöperative activity is a result of interest and attention; but it also produces them. Sometimes interest comes only with the doing of an act, and sometimes interest prompts the act. With children, and genetically with everybody, interest is a resultant of activity. Hence, participation in the work of the class—coöperative thought activity—is the condition out of which interest arises.

Any subject may be so taught that the pupils do not participate in it in any genuine sense. History, as a mere collection of facts to be memorized; arithmetic, as a series of rules to be applied; geography, as a mass of facts of location, of government, of industry, or of physical principles; grammar, as an organized body of truths about our language—in subjects taught thus, pupil participation is an impossibility. The belief that knowledge is the central aim of school education really prevents genuine pupil participation in class work. All imitatively acquired

knowledge demands a constructive use in order that it become one's own. The failure to recognize the greater educative effect of an association formed by one's self as compared with an association formed because of an external copy is, and has ever been, a fundamental source of pedagogical error both in the school-room and in the home.

With respect to knowledge already organized by another, participation is identical in meaning with discovery and invention and self-initiated activity. Participating is re-discovering, re-believing, re-inventing, re-living the life of the race. By thus giving to the materials of education the highest possible reality, one really *becomes*. And this is but the equivalent of a position already taken in this book, viz., that all consciousness is motor in its origin and it is never complete till it also becomes motor.

§ 57. THE FORMATION OF HABITS OF ATTENTION.

It is true that any activity of the self tends to repeat itself upon the presentation of an equivalent or similar stimulus. This tendency is incipient habit. It should now be perfectly clear that acts of attention when repeated become habitual, and thus the formation of habits of attention is as simple a matter as is the formation of motor habits. It is desirable that habits of attention to worthy things should be formed so that the child shall become self-determined. Habits of attention mean tendency to see certain things in the world, organization of the self, structure of the self, impulsive tendency.

Habits of attention are formed only by the repetition of similar acts of attention. If interest be present, the repetition is internally initiated, and the pleasurable element involved insures sufficient repetition for the formation of clearly defined and lasting habits. If interest be lacking, the necessarily externally caused repetition lacks in that all-important element of personal initiative which gives genuine vitality to mental activity. Therefore, whenever children do not genuinely live in school,

very few desirable habits of attention can be formed. We may paraphrase Portia's declaration about the quality of mercy thus: the habit of attention is not strained (forced).

Habits of attention are formed by the repetition of responses to similar stimuli. The habit of observing birds can not be formed by simply studying the sparrow and the canary. The range of observation must be much wider, and one must see how different kinds of birds adapt themselves to their environment, and what effects a particular adaptation has on the structure and habits of such birds. That is, the range of observation must be broad enough to introduce the element of variety. But variety must be supplemented by genuine reflection, or thinking. So, too, in the formation of the habit of attending to industrial processes, the range of observation and of doing must be broad and supplemented by thinking.

The amount of repetition necessary to the formation of a habit of attention is also dependent on the original vividness of the experience, and upon the vividness of the memory and imagination founded upon this original experience. The vividness of an experience depends largely upon the place which it occupies in a mental series—whether expected or not. If not expected, the vividness is proportional, in a rough way, to the intensity of the stimulus. If expected, the vividness is proportional to the intensity of the expectation—to the intensity of one's feeling and groping after it. This is why the setting up of problems for children to solve for themselves is such an effective method of teaching; and it also shows why passive methods of education are such miserable failures when judged by the idea that teaching is really forming the child's mind.

The danger of "closed habit," or arrested development, is very great in this process of developing habits of attention, and can be guarded against only by a constant appeal to the imagination. This appeal should be a means of broadening the child's imagery, and thus of preparing him for further observation, discovery, and invention.

§ 58. THE DEVELOPMENT OF PERMANENT LINES OF INTEREST.

If school life is what it should be, the lines of interest awakened therein will be productive of extra-schoolroom activities. The reverse movement is also commendable, viz., interests which arise outside of the schoolroom become the motive for school work. This dialectic of schoolroom and extra-schoolroom activities is what makes genuine living an inspiring reality in some schools, and the lack of it makes other schools to be "slaughter-houses of the mind."

The implications of this chapter and, in fact, of the entire book, are that it is possible, desirable, and imperative that pupils be brought to such a degree of constructive participation in the worthy realities of life that they become effective social units as regards both the actual and the ideal life of the race. Such a realization demands, as has before been implied, a constructive contact with generic race interests, activities, and ideals. The result of such constructive contact is the establishment of permanent interests—interests that do not fade with the dawn of vacation or of commencement, but—which become beacon lights to guide the man and the woman in the strenuous years that crowd them unrelentingly forward. The love of good literature is such an interest. Interests in geographical exploration, in great historical epochs and characters, in economic and social questions that never become political issues, etc.—such interests should become second nature.

The development of such broad, permanent interests is imperative in a Democracy such as ours, for they bring the individual who is made into a mere "shred of humanity" by our minute division of labor back into sympathetic and vital touch with generic human interests, activities, and ideals. Such permanent interests as are here discussed will make real that sense of "trusteeship of wealth" without which the power that wealth bestows becomes a social and personal menace, will make that sense of kinship and of

service which is the central ideal of Christianity the fundamental motive of life.

From this point of view, interest, attention, the teacher, the curriculum, the school system, and the ideals of education are but means to an end, means which will aid the child in becoming a worthy member of society.¹

¹ Excellent articles on Interest, are found in De Garmo's "*Interest and Education*," pp. 1—43; and Dewey's "*Interest as Related to Will*," in Second Supplement to the Herbart Year Book for 1895.

CHAPTER XIV.

THE PROFESSIONAL PREPARATION OF THE TEACHER.

If the preceding interpretations of the aims, materials, processes, and methods of education be valid, successful teaching is a very difficult task. In elementary schools as they are at present organized, a teacher has charge of pupils for a year; or, perchance, if the teacher be exceptionally good and the school authorities exceptionally sensible, two or three years. The result is that pupils oftentimes lose much because of their inability to adjust themselves to the "new teacher." Oftentimes, too, the difficulty of adjustment is due to the fact that the teacher is lacking in the sense of educational perspective.

A person who knows nothing about making shoes except cutting the lining or adjusting the heel, may be a successful workman in a shoe factory; but a teacher who knows nothing more about education than simply the geography he is to teach, will fail, not only in the general conduct of the school, but also in teaching the geography effectively. If the great aim of education is to be realized at all, it must be realized through the teaching and discipline of the school, the home, and the street. He who would teach successfully, then, should appreciate the relation of what he is doing to the realization of the great aim of education.

§ 59. THE TEACHER SHOULD UNDERSTAND LIFE IN ITS HISTORICAL ASPECTS, PRESENT FORMS, AND IDEAL TENDENCIES.

The aim of education, in any social group, is the ideal of that group. But each present group is indebted to other present and past social groups. Therefore, the teacher, to understand

the social level of to-day, must understand life in its historical aspects.

The teacher should understand the great historical movements of the past—not simply the names of the rulers, the dates of their births and deaths—not simply the statistics of the great battles for human freedom and advancement. Without in any way minimizing the value of an intensive study of historical movements, it is certainly true that an appreciation of the broad outlines of human development is necessary to an adequate realization of what society now is, and, hence, necessary to effective teaching. Such an appreciation comes more naturally and effectively from reflection upon such subjects as history, the evolution of government, anthropology, economics, and ethics, than from a study of Hegel's *Philosophy of History*, or Buckle's *History of Civilization*, for through reflection upon the subjects mentioned one forms his own philosophy of life. When this has been formed, the individual is in a position to profit by a study of Kant, Hegel, Spinoza, Plato, Plotinus, etc.

When one, through a study of the historical aspects of social life, comes to the formulation of a philosophy of social evolution, he discovers that the present social level is really dynamic. The present forms are not permanent realities, for even the institution of marriage is now undergoing change. Therefore, the teacher should not only know what social life has been, but also what social life is. This demands two things, viz., a wide acquaintance with men and affairs, and a sane sort of reflectiveness, or maturity. Other things being equal, the teacher with the widest knowledge of present industrial processes and exchange will be the best teacher of geography. The flippant fashion devotee is lacking in that maturity which is essential to educative teaching. A university graduate who does not know whether potatoes grow on the vines or underground would probably make a poor teacher of agriculture for a country school.

This appreciation of what social life now is prepares one to live in the actual social world. But when the child has grown

to maturity, society will have advanced. In a sense, then, no school can adequately prepare one for all the demands with which life will confront him. The thoughts of men, however, bridge this span with what are called social ideals. These social ideals are what men believe society ought to be. If, then, the child can be led to project social ideals, he is thus prepared to judge, as his experience progressively widens, of the values of the actual social adjustments with which he comes in contact.

The above analysis reveals the necessity for the teacher's acquaintance with the ideal tendencies of society. The teacher should, of course, have social ideals of his own, but he should also be acquainted with the ideals of others as well.

In the phrase "an understanding of social life" much more is included than is to be taught, and also that indefinable thing called "insight," "sense," "gumption"—the thing that no written examination can test and no set method of teaching infallibly develop.

§ 60. THE TEACHER SHOULD UNDERSTAND THE PHYSICAL, INTELLECTUAL, EMOTIONAL, AND VOLITIONAL DEVELOPMENT OF THE CHILD.

This understanding of social reality in the sense above outlined is only one phase of the teacher's preparation. It is by his progressive participation in social reality that the child is educated. The teacher, then, should understand the child. *Child* is ambiguous, for it may mean the non-existent *average child* or a particular child. Many children have been studied by trained observers, and a schematic outline of child development has been formulated. With this general outline of child development every teacher should be familiar.

There is, however, a serious danger in this connection, viz., the teacher is apt to regard every child whose development does not conform to this outline as abnormal, and it is a great misfortune to a child to be regarded by his teacher as abnormal. Dentists and physicians have formulated an outline of the order

of child dentition, but a child's teeth may appear in a different order and there be no real cause for alarm. Conscious imitation usually begins in the seventh month of a child's life, and yet the non-appearance of it at that time may result in greater originality and inventiveness in the child.

The general theory of child development is, notwithstanding its dangers, a valuable basis for the study of individual children. It is an understanding of the development of the individual child that is of greatest value to the teacher, and each child has its own order of development.

The physical development of the child is of first concern, as upon it all other development depends. To take the child as he is and develop him into what he ought to be physically, requires a knowledge of muscles and of exercises suited to their symmetrical development. The matters of diet, of exercise, of fatigue, and of rest are as necessary to successful teaching as is a knowledge of the revolutionary period to the teacher of United States history.

The intellectual development of the child, in its broad outlines, has already been sketched.¹ The interpretation of any particular child's intellectual development in light of any outline is subject to error, but such outlines are valuable as furnishing a basis of study and interpretation. The teacher needs to know how the child's intellectual activity develops from the uncertain perceptual response to chance stimuli, to reflective systematization.

Along with intellectual development, there inevitably goes emotional and volitional development. Here, again, the order of development is erratic. This erratic character is partly due to the impulsiveness and the unforeseen tendencies that inevitably arise from experience. In a previous chapter² under the heading "stages of selfhood in developing children" the chief emotional and volitional stages, as these appear in children of elementary

¹ Chapters V., VI., XI., and XII.

² Chapter VI., pp. 94-102.

school age, were imperfectly sketched. The analysis of these stages into more minute stages is desirable for the teacher.

The developing child, lacking as he is in inhibitive control, experiences the extremes of emotion. There is, therefore, great difficulty in developing a serviceable disposition, i.e., a generic feeling and volitional attitude toward the whole range of one's experiences. The "mood of the child" is so vital a factor in his education that teachers should be as skilled in dealing with moods as with subject matter.

The understanding of the child which is here urged is best described as genetic psychology supplemented by observation of particular children. The value of this lies in the ability it gives one to bring the developing child into such relations with social life and knowledge that the child becomes socialized.

§ 61. THE TEACHER SHOULD, BY PRACTICE UNDER GUIDANCE,
BECOME SKILLED IN THE TECHNIQUE OF USING THE
MATERIALS OF EDUCATION TO BRING ABOUT
THE MAXIMUM SOCIAL DEVELOP-
MENT OF THE CHILD.

In previous chapters the materials of education have been analyzed to show their essential social and socializing character, and the various methods of learning were also analyzed. The problem, then, for the teacher, is the presentation of the material in such a way as to bring about the maximum socialization of the child. This problem is simplified if the teacher plans his work in advance. To plan it successfully, he must organize the subject matter into a series of related problems, and thus make the subject matter his own.

In the actual teaching, the beginning teacher is likely to make many errors. These errors should be made "stepping stones to higher things." To this end, guidance should be suggestive rather than prescriptive; it should suggest how the teacher may find out for himself rather than give explicit directions as

to procedure. In short, the guidance should be of such a character that the beginning teacher becomes self-directive as soon as possible.

The criticism should be a calm discussion of the relation of the teacher's plan to what he actually did in the class, and of the relation of what was done to the child's actual growth in knowledge and in power. Presumably the teacher knows what purpose he had in mind and the steps by which he sought to realize this purpose. If his plan was given up, there must have been a reason for it. If the steps were not followed as they were outlined, there must have been valid reasons for changing them. If the steps were followed, were they of such a character as to realize the purpose? In short, was the fault in the plan or in the execution of the plan? Then, too, the excellent things should be considered.

The criticism should not degenerate either into a scolding or into a flattering of the teacher. The plain truth about the worth of the effort should be equally prized by the beginning teacher and by the critic, and the relations between these two persons should be that between an apprentice and a master workman, or that between pupil and teacher.

In most of our country schools, the criticism is mere perfunctory and periodic visitation. If the teacher is really prepared for his work and anxious to succeed, he will soon work himself into a better position. Relatively few teachers, however, who begin their work in country schools, are prepared for the work of teaching. They "assign lessons," "hear lessons," and keep the children from destroying property and from fighting. The pupils in such schools usually learn and develop by accident.

In small village schools, the matter of supervision is little better than in country schools. The principal teaches the more advanced pupils and occasionally gets into the other rooms to see an exercise. His own teaching work is so arduous that he can do little more than prepare a course of study and hold occasional teachers' meetings at which matters of general interest are

discussed. The teacher's problem, however, is simplified because he has fewer grades to teach.

As soon as a community is large enough to support a non-teaching superintendent, business and executive matters relating to the school have so multiplied that he has no time for supervision of the effective sort. Special teachers of music, drawing, gymnastics, manual training, etc., are employed. These special teachers are of two types, viz., those who actually teach, and those who supervise. To this supervising body must be added the influence of the grade and general teachers' meetings that are directed by the superintendent.

This analysis shows clearly that some preparation for teaching before one actually begins the work is necessary, or else the development of skill in the process is left to blind and fatal experience.

This blind and fatal opportunity to become skilled in teaching is supplemented in some schools by cadetting. This cadetting may be simply an opportunity to assist in the care of an overcrowded room, or an opportunity to teach under effective supervision. Often the cadetting is supplemented by a course of study in psychology and educational history. This combination makes it really possible for one to grow into teaching power under reasonable conditions. The objection to it, however, is that the breadth of knowledge of those who do the cadetting is usually that of the city high school, and is not broadened during the training except along professional lines.

A further elaboration of the plan just discussed results in the city training school, which varies all the way from the barest expansion of the cadetting plan to a plan akin to that of the best state normal schools.

The normal school supplements the obvious defect of the cadetting system. It aims to extend the prospective teacher's knowledge and to give him insight into the materials used in elementary education. Along with this line of work, there is a study of educational ideals and conditions of the past and present.

psychology, and as effective teaching under guidance and criticism as is deemed possible under existing conditions.

Schools of education, under various designations, are being formed in connection with our leading universities. These university schools do not ordinarily attempt the intensive study of the materials of elementary education. This leaves for them the study of the various phases of the theory of education, educational history, research, and experiment, and whatever actual teaching under guidance and criticism is deemed expedient.

There is, despite these various opportunities for gaining skill in teaching under guidance and criticism, a host of inefficient teachers in the schools of our country. The fundamental cause of their presence is the state of the social consciousness regarding education. This apathy is disappearing rapidly with the spread of modern means of communicating ideas and with rapidly increasing wealth. The doom of inefficiency in the schools is sealed, and nothing short of a retrograde movement toward savagery can stop the present movement towards the improvement of the character of the public schools.

§ 62. THE TEACHER SHOULD APPROACH HIS TASK WITH A FULL CONSCIOUSNESS OF ITS SIGNIFICANCE AND WITH A DESIRE TO SERVE THAT "OTHERS MAY HAVE LIFE AND HAVE IT MORE ABUNDANTLY."

If the teacher has an understanding of social reality and of developing children, and has acquired the skill already discussed, he can approach his task with a full consciousness of its significance to the individual children, to the homes from which they come, and to society. This consciousness of the significance of the work of elementary school education makes teaching a pleasure, gives a touch of the dignity of the educative process to the daily work of the teacher, and thus destroys that sense of drudgery which was once almost epidemic among school teachers—it raises teaching from the hod-carrier's level to that of the architect, at least.

But beyond this appreciation of the significance of the educative process is the question of the teacher's motivation. One may throw stones into a placid pond and know that the ripples reach the distant shore, raise the temperature of the surface water and the adjacent land, assist in changing the form of the granite boulders on the pond's edge, etc. Consciousness of the significance of the far-reaching consequences of one's acts is, after all, a barren thing, even for the teacher. The question, Why does one, as a teacher, seek to influence his pupils? demands an answer. Teachers must live, and the salary is important; but if one teaches for the salary alone, it is a poor and sorry business. But teaching gives one an enviable position in the community, social prestige, influence, etc. This is true: but if this be one's ultimate motive, he thrusts himself into the lives of boys and girls that he may achieve social distinction for himself.

Civilization, despite unbelief and carping criticism, is essentially Christian. Social institutions are based on the notion of social service. One must lose his life in service before he can really find it. The Master said that he came, "that ye might have life, and have it more abundantly." This same spirit should be the fundamental desire of the teacher. No particular denominational alliance of the individual is necessary, but if one has not, fundamentally, in his view of life, this desire to live in such a way that the world may be better for his having lived—this desire to help forward the life of the race to higher and better levels—his place in the world is not that of a teacher.

CHAPTER XV. .

A DISCUSSION OF THE SUMMARIZED THESES UPON WHICH THE ARGUMENTS AND CONCLUSIONS OF THIS BOOK ARE BASED.

In order to condense into a brief statement the fundamental ideas advanced in this book, theses that are felt to summarize these ideas have been formulated.

1. Education is inevitable.

One can not escape experience. One chooses some experiences and others are forced upon him. So long as one responds, either voluntarily or involuntarily, to stimuli, he is changed through his response. Even in the case of established habit, repetition renders the connection between the successive parts of the action more permanent. The soul is more like the sea that is never fully at rest than it is like the immobile rock. This incessant change in the structure and organization of the self is, considered simply as a process and having no relation to an end, *education*.

2. Education ought to be a progressive socialization by participation.

Experience always implies a sequence of mental activities and this sequence would, in the development of the child, naturally follow the order of the stimuli that happen to come to him. Just as soon as a child has experiences his education begins. The child's parents, however, wish him to become an acceptable member of the family, and so, with almost infinite patience and love, they set about teaching him. That is, the parents endeavor to control the stimuli that shall play upon the

child. The parents also share in the educational ideal of the social group to which they belong, in the ideal of their country, and in the ideal of the race. In consequence of this educational consciousness in the parents, the child is sent to the school which has been organized by just such an educational consciousness as that which the child's parents now have.¹

It is by participation, fundamentally, that the child becomes genuinely social. By doing as others do the child gets the primary basis for feeling as others feel, thinking as others think, acting as others act. Many adult social activities, however, are so complex that the child can not perform them, and there is, and must be, a reversion to simpler activities and processes. These simpler social activities and processes are the ones followed by our remote ancestors, by Indians, savages, and the pioneers. The child's interest in primitive social adjustments may be due either to racial inheritance or to their suitability to his particular level of attainment, or to a combination of these two things in varying degrees.

But, from whatever source the child's interest may spring, there is thus afforded a basis for genuine development, for progress from simpler social adjustments to more complex ones. The progress thus made, provided it be toward the social adjustments now revered, is what is meant by progressive socialization. As civilization becomes more and more complex, that is, as more and more difficult adjustments are required of the individual, the period of real infancy lengthens, the advent of maturity comes at twenty-eight or thirty rather than at twenty-one, and the period of school education is lengthened. At best, the child can get only certain social adjustments that are typical and vicarious. The broader the range of these typical adjustments, the better for the individual and for the society in which his lot is cast. The narrower the range of this typical racial adjustment, the narrower is the individual.

¹ Compulsory school attendance laws are for those parents who do not have the educational consciousness here mentioned or who would deny it for the economic gain that would result from the child's labor.

3. This progressive socialization should be both actual and ideal.

Progressive socialization by participation, which is here set up as the rational aim of all education, should result in two things, viz., actual social efficiency and ideal social efficiency. As a result of the educative process the individual should have the power and the disposition to coöperate with others in social life. Actual social efficiency includes more than industry, honesty, and the discharge of political functions. The actual and the ideal are so interwoven that no clear line of demarcation between them can be drawn. The ideal is, in a way, what the actual would become if it were harmonious and universal. The individual should be sensitive to these ideal tendencies, willing to conserve them, and devoted to making them to be actual. In short, the individual should unflinchingly and honestly perform his part of the world's work, and strenuously endeavor to make the world better for his having lived in it. One can not better state this thought than to quote from President Hyde:—"One's duty is the realization of his capacities and powers in harmony with each other and in proportion to their true worth as elements in a complete individual and social life."¹

4. The mind learns, or becomes by its own activity.

Experience, however, is not wholly a matter of an objective environment made up of copy, stimulation, and ideals, for the response of the mind is as important and necessary as is the stimulation itself. The response of the mind is what is meant by "its own activity." Self-activity, as used throughout the preceding pages, is not the *causa sui* of speculative philosophy, is not a self that acts unconditioned.

The self, by its reaction to a stimulus, becomes different, other, more of a self. Experience is taken up into the self and by this process the self grows and develops. This growth and development is really organization. Experience is not *added*

¹ *Practical Ethics*, p. 179.

to the self—it is made one with the already organized self, thus producing a new self with every experience.

The extent to which the organized self is involved in the response is the measure of the self-activity implied in the experience. "Passive states of mind" are really mental activities in which the organized self functions in a minimal way, while active states are those mental activities in which the organized self functions in a maximum way. The relation between body and mind is such that bodily activity may occur with a minimum of consciousness. All methods of teaching that have the establishment of habit as their aim involve this possibility of mechanical response in a high degree. The danger in all such mechanical work is that the organized self shall cease to function in the response.

There is, however, a clear value of this mechanical element in education. The value consists in what Rosenkranz calls "the re-inforcement of the dynamic by the mechanical." It is by this mechanical element, this organization of brain habits and brain tendencies, that one's past experiences can be brought to bear upon present ones. The truth of this position and its far-reaching consequences in education do not constitute any valid grounds for making method, at any stage of the child's development, predominatingly mechanical.¹ Control, power to profit by past failures and successes, ability to form syntheses of wider reach and value, depend on this mechanical basis. But in and of itself, without the mental equivalents back of it, mechanical power is meaningless. The true place of the mechanical element in education, is, as Rosenkranz says, "the re-inforcement of the dynamic."

If what has been said of the development of the self be true, it follows that education is a process of *infolding* as well as a process of *unfolding*. Experience integrates with the self and thus infolds a new element into the self. The mere effort to express one's meaning necessarily implies that a new sense of

¹ Hall's *Adolescence*, preface, p. xii.

meaning arises (except in cases where the expression is purely mechanical). The so-called forms of expression are as truly forms of impression. "We learn to do, to think, and to feel by doing" is only another way of saying that the mind learns by its own activity.

5. The various stages, or degrees, of mental activity may be stated as (a) involuntary experience, imitation, discovery, invention, self-activity; (b) as image and conceptual thinking; or (c) as primary and derived activities.

Taking the whole range of mental activity, it may be classified in various ways.

(a) In Chapter V. mental activities were classified into involuntary, conscious imitation, discovery, invention, and self-activity. This classification is based on the extent to which the organized self functions in the experience. It has been seen, too, that the greater the extent to which the self functions in an experience, the higher is the educative efficiency of the experience. Therefore, that method of schoolroom procedure which constantly incites the child to re-discover and to re-invent his racial inheritance is the most educative. The one exception to this fundamental principle is found in gaining control of conventionalized modes of behavior.

(b) This same matter may also be expressed as image and conceptual thinking. Mental activity is, genetically considered, the response of the mind to a sensory excitation. The data thus obtained are elaborated by the mind into more and more inclusive activities which become more and more significant as the organized structure of the self enters into them in a less sensuous way. This inclusive significance is the ideal element, the element furnished by the mind as it has been organized by its experiences.

The image has more of the motor tendency in it, and hence, has a keener emotional coloring than has the concept. The crude love of pleasure in young children is thus seen to be due, in part, to the limited character of their experiences. With

the growth of the child's mind in conceptual power, his emotions also develop. With the growth of the power to interpret the present in terms of its essentials, there grows up in the child the power and the disposition to plan for the future. Gradually, as his mind performs these activities of wider and more inclusive reach, the child becomes mature, gets a sane, impersonal view of the meaning of life, forms a philosophy of life.

So far as one can derive a method of schoolroom procedure from this description of the character of developing experience, it is this:—The teacher should, as the child's developing experience warrants, stimulate him to the formation of syntheses of wider and wider reach.

(c) The growth of the mind from its primitive bondage to the senses to a relative freedom may also be described by the phrases *primary experience*, and *derived experience*. Primary experiences are those basal ones that come because of one's immediate contact with the material world, whether he choose this contact or whether it is forced upon him. The data thus derived are recombined into new wholes, are broken up in various ways and then recombined, or connected with present stimulations of various kinds.

The difficulty of drawing any significant distinction between these two kinds of experience, and the importance of both kinds at every stage of mental development, render it impossible to formulate any method of schoolroom procedure in accordance therewith.

To summarize:—In whatever terms one describes the essential character of the various degrees of mental activity, it is evident that the teacher should stimulate the child to wider and higher and more ideal activities.

6. The school should be so organized that the child thinks for himself and thus re-creates his race inheritance.

The school is primarily a social institution having as its central aim the socialization of children. The child becomes socialized by participation in social situations, he transforms

himself by building up within himself a world of thoughts, feelings, and attitudes that are essentially like those of his fellows. By doing as others do, by thinking as others think, the child becomes as others are.

This race inheritance is the birthright of every child, but he can "come into it" only by re-creating it for himself. A part of it must be re-created by conscious imitation, another part by discovery and invention, and still another part by self-activity and reflection.

The school is by no means the exclusive agency for the socialization of the child, but it is a specially organized agency. As such, it can never measure up to the ideal of which it is an exponent by setting up the acquisition of a body of knowledge or the development of industrial and technical skill as its distinctive aim. Knowledge and skill there must be, but these things have value only as they are matrixed in social life—matrixed in such a way that they spring out of a sense of need and plunge forward into concrete social deeds. The child is not conscious of the significance of his education, but the school should be so organized that he progressively develops this appreciation.

The sense of what life is and of what life means comes only as a resultant of concrete and complete living. Concrete and complete living means the re-construction and re-creation of the content of social life. The school, then, should be so organized that the child progressively re-creates his race inheritance.

7. The scope of the school should be such that, supplemented as it is by extra-schoolroom experiences, the child builds up a sane view of life and develops an ethical attitude toward the actual and toward the ideal.

The scope of the school is variable because other social institutions are variable in the opportunity they offer, from generation to generation, for the genuine socialization of the child. Within the past fifty years there has been a great shifting of social functions because of the marvelous industrial

transformations which inventions have wrought. The centralization of population has rendered acquaintance with fundamental forms of adjustment to nature and of domestic manufacture impossible for children in many homes. These basal things should not be left out of the child's life. Whether it be the best plan or not, the school is the institution upon which devolves the function of supplying this fundamental socialization. Therefore, the spirit of the school should be that of the ideal home. Whatever the expanding and developing life of the child needs for its genuine socialization, is what civilization *owes* to every child that is born into it. And if this debt is not discharged by any other social institution, it is the plain duty of the school, so far as social consciousness permits it, to pay this debt with interest. The civilization that can satisfy itself with efforts at *reformation* alone, is covered with all those crimes that might have been prevented by rightly directed efforts at *formation*.

A sane view of life can come into being only as an outgrowth of a wide enough range of actual experience to acquaint one with the typical and essential human interests, activities, modes of behavior, and ideals. A narrow and highly artificial and conventionalized life for children produces shallowness and a lack of genuine social sanity.

The sort of sanity here implied is the only valid basis for the development of a genuinely ethical attitude. An ethical attitude is not an abstract, sorrowful view of one's duty to his fellows, but is rather a joyous guidance of conduct with reference to the best which one knows—it is a progressive growth into those views of permanent value which the loving thought of mankind has wrought out. Each person must work out for himself this spiritual phase of ethical attitude. One can work it out, however, only on the basis of a concrete acquaintance with it. Conduct is the external manifestation of one's sense of himself-as-related-to-others. The first sense of self-as-related-to-others comes from imitation, and is refined and uni-

versalized by reflection upon the ultimate value of certain forms of behavior.

For one to grow up to the level of present social values is a great thing. For one to struggle for the attainment of a higher level for himself and others—this is the “greatest thing in the world.” And this “greatest thing in the world” is the *raison d'être* of all the other things, it is “the last, for which the first was made.” To get on in life is worth while only as it leads to helping life forward.

If one reflects at all deeply, he will discover that all that he is, other than “an infant mewling and puking in its mother’s arms,” he has become through the ministrations of others; and he will feel that the least he owes humanity is a life of service. This service is, essentially, shaping one’s life in accordance with the ideal.

8. The problem is the means, *par excellence*, for rightly conditioning the child.

How to bring out progressively this attitude of service is the great problem of all method, for one may “have all knowledges” and be “as sounding brass and a tinkling cymbal.” The attitude of service can come only through the activity of service.

The problem, which consists of certain relations given and certain relations required, which can be ascertained from those given, is the best means for rightly conditioning the child. Problems having no social reference whatever could be formed and the solution of these might develop power apart from serviceable attitude. But if the problems are matrixed in social experiences, as has been urged in the preceding pages, the power developed is inseparable from the attitude. The possibility of the development of such an attitude along with power is the implicit strength of all demands that the child should really live in school.¹

¹ Contrast the above with the following from Hall’s *Adolescence*, preface, pp. xi. and xii.:

“We should transplant the human sapling, I concede reluctantly, as early as eight, but not before, to the schoolhouse with its imperfect lighting, ventilation, temperature.” “To many, if not most, of the influences here (in the school) there can be at first but little inner response.”

The emphasis may be varied a little by saying that the great outcome of education is, after all, not knowledge, but serviceable attitude. Surely initiative, self-reliance, and originality can not be fostered and developed by a method that prescribes absolutely the activity of the child's mind. Nor can teachers with any reasonableness expect that, some fine day after all their dull and unsocial teaching is done, and the child has "graduated in new clothes," he will suddenly metamorphose himself into a being capable of participation in a Democracy. If the great aim of education is to be realized at all, it must be realized progressively in the concrete acts of the child's experience both in and out of the schoolroom. This conclusion means that both the materials and method of education ought to be in harmony with the aim.

9. The aim and the pivotal question are problems for the child to solve.

The teacher can realize this ideal in his work only by bringing the materials of education to the attention of the children in such a way that a problem arises in their minds in consequence. These concrete problems, which should be framed usually by the children themselves, are called aims. In the working out of these aims, sub-topics, or pivotal questions arise. These pivotal questions phrase the organic aspects of the material that is being studied, and are the means by which the aim is reached.¹

10. The materials of instruction should be organized into units, or topics, which, when worked out as a series of problems, give the materials usually included in such subjects as geography, history, drawing, spelling, composition, etc.

The organic aspects of the material studied are so vital that, if they be given opportunity to control, they will practically organize the material into a series of topics, or units of study which, taken collectively, form the separate subjects of the curriculum. This order of topics may not be the order of existing

¹ This matter has been so fully treated in the chapters on *The Recitation*, that further comment is unnecessary.

textbooks, but it will be far more significant to the children. The order of topics would probably not be the same in any two schools, nor would the same topics probably be included. So long, however, as there is real growth of power and serviceableness, a certain equivalence in elementary education must be conceded as the elective principle concedes it in higher education.

The course of study is not merely so much knowledge to be "administered" to children in uniform doses, but is rather a varying opportunity for constructive growth for each child.

11. The teacher should develop a sense of need in the child, and not rely wholly upon already established interests.

The positions here defended do not mean that the capriciousness of the child should be allowed to ruin this fine opportunity for growth. Interest is the felt worth of an object for the self that feels the worth. Essentially, it is the conceived relation of the object to the self that leads to interest. The teacher can, then, bring worthy objects into such relations to children that they conceive these objects as having worth.

This does not mean that all medicine should be sugar-coated (although if this does not detract from the remedial properties of the medicine I can see no reason why one should object to the coating), or the awakening of factitious interests. It does mean, however, that the teacher is able to arouse desire, sense of need, interest in the child, by influencing the direction of his attention through bringing certain stimuli to bear upon him in a definite way. This is the privilege and the duty of the teacher. If this be not done, the one who is presumably in charge of the immature ones is not a teacher.

The sense of need, desire, or interest thus awakened by the activity of the teacher should progressively be in line with those interests which will enable the child to participate more and more adequately in the actual and ideal life of the race.

12. Since all consciousness tends to be motor in its consequences, and since the motor realization of an idea integrates it as an element of character, all forms of expressive and con-

structive experience should be fostered by the school.

This proposition simply means that the primary basis of all higher mental activities is found in reactive experience, and constructive motor experience, as this is distinguished from those restricted forms of reaction which constitute conventionalized symbols. Therefore, education should utilize this large, free motor activity as the basal thing. The school should not presuppose this basal motor experience when it does not exist. It has been conclusively shown that as civilization becomes more complex the homes supply less of this basal motor experience than they did in former times, and it seems more sensible to reconstruct our schools than to bemoan the irretrievable change in social conditions.

13. To be interestedly busy in doing worthy things is the best kind of discipline.

It has been shown that the child's conduct both reveals and forms his attitude toward things. Genetically considered, conduct must form attitude before it can reveal it. Therefore, to be interestedly busy in doing worthy things is the best kind of discipline. These worthy things must have a felt worth for the child.

14. When conduct springs from selfishness or meanness, negation by substitution is the best mode of dealing with it, but corporal punishment is a last resort.

One must not suppose, however, that the capriciousness, arbitrariness, and anti-social feelings of children can be wholly eliminated by any organization of the school. Selfishness and sometimes meanness appear. The most sensible treatment for such cases is inhibition by substitution. If the teacher can influence the child to inhibit the objectionable response by substituting a commendable one for it, there is no valid reason for treating the offense in a more heroic way. Very often teachers yield to the desire to vindicate themselves by a display of their authority. It is the welfare of the child, however, and not the personal feelings of the teacher that should be considered.

Yet it is better for the child that he should suffer the pain of

corporal punishment and even the disgrace of being whipped in the presence of his peers than that he should persist in acts of selfishness and meanness. All punishment is a corrective, pain voluntarily inflicted by one responsible for the growth of another with the idea of *re-forming* a *mal-formed* sense of self.

15. Education is such a complex thing that the school becomes what it should be only when all the forces involved work together harmoniously and effectively.

To quote the opening sentence of this book:—"Education, in one aspect or another, touches every human interest, and is the most universal concern of mankind." It is, therefore, a very complex thing both because of its reach and because of the multitude of things that influence it. One can grasp it only by thinking of its sweep and by picturing it negatively. It is the effort of a present society to perpetuate itself through industry, science, art, and institutions. Therefore, to the extent that all the factors in the control of this process have a sense of its meaning and worth, to that extent does the greatest efficiency of the process become a possibility. When to this insight into the meaning and worth of education there is added the desire to help life forward in the spirit of the Master, this *possibility of education* becomes a *reality in education*.

APPENDIX

PART I.

AN ANALYTICAL SUMMARY.

This summary of the book in outline form is introduced to afford a means of review for students who work alone, and for the benefit of those who wish to get the whole thought of the book in a few pages. The separate sentences will, in many cases, furnish excellent material for an effort to present the argument underlying them in either an oral or written form. After one has thus formulated his thought, he should compare it with the text for verification. The student will in this way get a clearer grasp of the matter than he possibly could by any amount of reading and re-reading.

CHAPTER I. INTRODUCTORY.

Pp. 11-17.

Skill is always an evidence that one has been educated—Education is the most universal concern of mankind because (1) it touches every phase of human life, and (2) continues throughout one's life—Education has been described as *othering*, building a world, removing a tension between the ideal and the real—Society establishes schools for the realization of social ends—The fundamental problem of the school is, What materials of education and what methods of procedure are most efficient in realizing the aim of education—If specialists choose the materials and prescribe the methods, the teacher is merely an executive—The teacher should be an artist—To reach his highest efficiency the teacher must have a "motor knowledge" of psychology and of the aims of education.

CHAPTER II. THE AIM OF EDUCATION AND THE FUNCTION OF THE SCHOOL.

Pp. 18-32.

The sequence and the character of one's mental activities are dependent upon the sequence and the character of his educative experiences.

§ 1. (pp. 19-21.) The aim of education is the same as the conscious aim of society—All social groups have ends which they strive to realize—Each person derives his educational ideal from his manifold social relations—This ideal is pervasive and inclusive, but changes with progress.

§ 2. (pp. 21-22.) The aim of education has a formal, static character—Each group strives to perpetuate itself socially as well as physically—Hence, the young must be taught to perform those functions which adults now perform—These functions are actual and ideal—To have the young become what adults in the group are is a formal aim because what this implies is not set forth.

§ 3. (pp. 22-24.) The aim has a spiritual, dynamic character—The ideal of what one should be and do changes as the group develops—The meaning which a social group puts into the words expressing its ideal is the spiritual element of the aim of education—Social groups are subject to habit, especially with respect to organized institutions—There are many evidences, however, that there is growth in the educational ideal.

§ 4. (pp. 24-26.) The aim is adequate participation in social life—The life of the race is actual and ideal—To participate adequately in social life one must be able to understand and use language; must have a broad enough first-hand acquaintance with the great types of human activity to be genuinely sympathetic; must appreciate ideals—As society becomes complex and interdependence grows, group ideals give way to racial ideals; and racial ideals, in turn, to ideals that include all mankind.

§ 5. (pp. 26-29.) How participation is possible—(a)—Since each group has some notion of its relation to nature, and since life is maintained, primarily, by getting into certain relations with natural things, each child must gain a certain control over natural things—A wide acquaintance with typical forms of human control of nature is valuable—Occupations are especially valuable in elementary education—(b)—The group has a mental and social life into which the child must grow—Passive and active controls of symbolism are implied in this growth—From content to symbol is a characteristic of the new education—(c)—The child can grow into institutional life only by participating in it.

§ 6. (pp. 30-32.) Many of the things necessary to the socialization of the child, especially symbols, can be taught to many at once—Humanitarian motives lie back of the founding of nearly all schools—Schools are sometimes good financial investments—The public school grows in favor as social consciousness broadens—Schools ought to supply that which the expanding life of the child needs for its genuine socialization.

§ 7. (p. 32.) The real social character of the public school—The great social aims are conservation and advancement—Adequate so-

cialization is the debt society owes each child—The public school is an institution having socialization as its supreme task.

CHAPTER III. THE MEANING OF EDUCATION.

Pp. 33-43.

The meaning of education is found in the concrete activities which make up the process of education—Different meanings arise from looking at the process in different ways—There is a value in studying these differences.

§ 8. (pp. 33-35.) Education as a process of organizing acquired habits of conduct and tendencies to behavior—Habit has a large place in human life—Habit is largely physiological—Mental habit means mental organization, and this, in turn, is the self—If given a physiological interpretation merely, this description is inadequate—It also fails to set up an end toward which the process moves.

§ 9. (pp. 35-36.) Education as a process of grafting serviceable reactions upon natural tendencies—Natural tendencies are the *sine qua non* of learning—Only the first things are learned by grafting.

§ 10. (pp. 36-37.) Education as a process of widening the gap between impression and expression by inhibition—The action of the natural law of nervous reaction is modified by inhibition—Reflection is made possible by this inhibition-caused gap.

§ 11. (pp. 37-38.) Education as a process of world-building—Each person by his mental activity builds up a world for himself—The "outer" has an existence for the individual only as he makes it "inner."

§ 12. (pp. 38.) Education as a process of *othering*—This description emphasizes the abstract aspect of separate educative acts, but neglects the dynamic effect of experience upon the self—It sets up a standard of what constitutes an educative activity.

§ 13. (pp. 39-40.) Education as a process of removing a tension between the ideal and the real—This description is true of voluntary acts—In education there are the two processes of establishing a tension and of removing it—The doctrine of estrangement, as given by Rosenkranz, can be stated as a process of becoming explicitly what the self implicitly is.

§ 14. (pp. 40-43.) Education as a process of socialization—The social character of the process of education is seen in the influence which adults exert over children—Social life is both actual and ideal—The ideal grows out of the actual—Socialization has in it the stages of reactive behavior, conscious imitation, the interpretation of symbols, and the setting up of ends for one's self—The presence of

society influences one's development—This description of the process is both inclusive and specific.

CHAPTER IV. THE MATERIALS OF EDUCATION.

Pp. 44-62.

§ 15. (pp. 44-52). The social reference of elementary school subjects—(a)—Language socializes the individual in two ways—Language becomes an expressive symbolism only by being associated with contents—Reading, writing, spelling, grammar, drawing, color work, etc., have socializing values—(b)—Arithmetic is social in its origin and in its reference—(c)—Geography includes present social adjustments—(d)—Literature treats of possible social adjustments—(e)—Construction work (including manual training) gives a basis for social sympathy and action—(g)—Elementary nature study gives one a sense of present social controls of nature and also a certain degree of power to serve, to enjoy, and to think.

§ 16. (pp. 52-56.) The materials of education may be classified as institutions, industries, sciences, and arts, each of which has a social reference—Participation in institutional life is fundamental—Industries have a social reference—The narrowing effects of the division of labor are to be overcome by training in typical industrial activities—Science has grown out of the arts (concrete doings) of civilization—To become truly human, the child should become scientific—Arts are distinctively social in their nature.

§ 17. (pp. 56-57.) The materials of education as equipping one to act effectively in all relations—The child must adjust himself to natural laws—Social institutions also demand conformity—Ethical conduct is in harmony with law—So, too, religion implies conformity to God's laws—The result of one's being in harmony with natural, institutional, ethical, and religious laws is freedom.

§ 18. (pp. 57-59.) The relation of the materials of education to the making of an honorable living—Self-support through social service is the duty of every adult person—All things related to one's occupation or to one's enjoyment are educative materials—Books are educative when they summarize and integrate experiences—School studies are not the exclusive educative materials.

§ 19. (pp. 59-62.) The relation of knowledge, culture, and character—Knowledge is mental control, or the reconstruction of those relationships which inhere in things—Transient and permanent knowledge are not equally formative—Use is necessary to permanent control—A desirable organization of self is character—The acquisition of knowledge forms character—Culture is the power to enjoy

the things that make for mental and spiritual advancement in ideal ways—Knowledge, character, and culture are interrelated—The significance of education is found in the re-creation by the child of his race inheritance.

CHAPTER V. METHOD IN EDUCATION.

Pp. 63-85.

The fundamental question of method is, How does the child re-create his race inheritance?—Method is the reverse of the process by which the child learns—Essentially, the mind learns by experience.

§ 20. (pp. 64-69.) Involuntary experience has forms called spontaneous movement, reflex action, sensory action, impulsive tendencies and movements, instinctive action, physiological suggestion, sensori-motor suggestion, and ideo-motor suggestion—The connotation of words is suggestion based on association—Consciousness is not simply a picture of the world—Mental activity in these simple forms seems almost to fall within the conservation of energy.

§ 21. (pp. 69-71.) Conscious imitation—Analysis and synthesis are presupposed in mental development—Conscious imitation implies both motor and mental syntheses—"Bare" imitation is merely motor synthesis—The child becomes human and social by genuine imitation—Power and tendency are the outcome of imitation.

§ 22. (pp. 71-74.) Discovery—The mental construction which corresponds with things as they are is discovery—Only things that exist can be discovered—Accidental and planned discovery are very different—The relation of the hypothesis to planned discovery is important and close—Discovered things have vital relations to one's life—Discovery is related to thinking by cause and effect—Discovery can not be a universal schoolroom method.

§ 23. (pp. 74-75.) Invention—Invention is original synthesis to which there is no corresponding objective reality in the natural world—Tentative theories are essential to invention—Re-invention is educative.

§ 24. (pp. 75-76.) Self-activity—A primary stock of mental experience is a necessity in mental development—Elaboration of experience is the true order of mental development—The school has a twofold function—Re-creation by discovery and invention is most highly educative—The two aspects of mental development are progressive mental syntheses and adequately expressive symbolism.

§ 25. (pp. 76-81.) Other terms used in describing method—Observation is *anschauung*—The mental activity in valuable obser-

vation is thinking—Formal object lessons are valueless—Experiment is allied to controlled observation—Manuals of experiment in school education often prove useless—Experimentation is often too rapid—The value of discovery and invention in experimentation is often overlooked—Reflection has various meanings—Doing is fundamental to education, but may easily degenerate into routine—The selective activity in occupations is what makes them skilled.

§ 26. (pp. 81-84.) The Formal Steps—Are said to be a uniform method of teaching—Very few things in the curriculum of elementary schools can be taught by the method of the formal steps—Conceptual knowledge is only one phase of mental development, not the totality or even the essential phase—The formal steps imply a completeness of knowledge which ignores the “circularly progressive”, or spiral, character of developing experience.

§ 27. (pp. 84-85.) Method is correlative with ways of learning—Some things are naturally learned in one way and some in another—The teacher should adapt his method to this truth—The sense of need in the child is necessary to effective learning and effective teaching.

CHAPTER VI. DISCIPLINE.

Pp. 83-114.

§ 28. (pp. 83-91.) Introduction to the problems of discipline—Instruction and discipline are means by which the aim of education is to be realized—Discipline is a positive thing—Discipline is difficult because the effect of punishment can not be predicted with certainty, the self of the child is variable, and sometimes outside influences make for the bad—The fundamental aim of discipline is the formation of character—The fundamental principle of method of discipline is, one becomes by being—The essential thing in development is that one is formed by his activities—The theory of moral development held by the teacher influences his conception of discipline—The theory of total depravity leads to severity—The theory of innate goodness leads to anarchy—The evolutionary theory leads to despair—The theory of experience and reflection explains ethical development and leads to a sane view of discipline.

§ 29. (pp. 94-102.) Stages of selfhood in developing children—The spontaneous, reflex, instinctive, and sensory stage gives a stock of motor images, of coördinations, and tendencies—The ideomotor and unconscious imitation stage gives a crude sense of a fraction of life and some skill—The setting up of pleasurable ends and the seeking of approbation from elders gives rise to a sense of power

and of duty—Seeking distinction with one's peers gives an exaggerated sense of one's own importance—Self-satisfied and timid stages retard mental development—The desire for economic independence gives the basis for industry and a sense of how others live—The stage of loyalty gives rise to the sense of "social solidarity"—The stage of adolescence gives the consciousness of sex and the basis for a philosophy of life—The child's reaction to the stimulus is what educates him—This response depends upon what the child is as well as upon the stimulus.

§ 30. (pp. 102-131.) The meaning and interdependence of organization and management—I—The mechanical phases, heating, seating, lighting, ventilating, program making, in relation to study, recitation, and fatigue are important because of their relation to the mental activities of children—II—The spiritual phases—A—The course of study indicates what society desires its young to know—Social habit is dangerous and common—Only those studies which are desirable on social grounds appear in a course of study—Each study has a clear social reference and value—The course of study changes because of social changes—The order in which the course of study is presented is usually determined by the school and is very important—The course of study should provide for continuity and interest—The course of study should be regarded as an opportunity for constructive thinking by each child—(B)—The personal influence of the teacher vitalizes the course of study—The unconscious influence of the teacher is great—The conscious influence of the teacher is, at times, the turning point in a child's career—Self-control, sympathy, insight, honesty, consistency, and evenness of temper are necessary to the successful teacher—(C)—Coöperation in various forms constitutes a valuable element of mental training—This element appears in plays and games, in doing necessary things in the schoolroom, in drills and marches, in bringing from homes the things needed at the school—(D)—The decoration of the schoolroom and grounds is an important matter—Art has a value—Decoration should be dynamic—Participation in decoration is essential—Active impressions are more educative than passive impressions—Beautifying the school yard is a school duty—School gardens and flowers should develop an art sense—Common things may be used in dec-

oration—The spiritual phases of school organization and management are a unit in being formative.

CHAPTER VII. DISCIPLINE (CONCLUDED).

Pp. 115–133.

III.—The social relationships involved—The school is clearly a social institution with manifold relations—(A)—Legal relationships—*In loco parentis* has two meanings—Suspension is a power of the teacher and expulsion of the school board—Purchase of supplies is also a duty of the board—Prescribed studies should be taught—Compulsory attendance laws should be enforced by the proper officials—Records, reports, etc., are important—(B)—Extra legal relationships—The teacher should participate in the community life and should visit parents and patrons—Parents and patrons should visit the school—Patrons' meetings should be held at the school—Teachers should be broad-minded, tactful, slow to anger, and skilled in healing wounds—IV.—The conduct phases—Conduct is chosen action—False ideals of order are prevalent—(A)—Possible conduct situations are easily analyzed—A positive phrasing of what conduct should be in various situations is helpful—(B)—The prevalent offenses against the order of the school are easily tabulated—(C)—Offenses spring from causes and from motives—Not all punishments are suitable in connection with offenses springing from the various causes and motives—(D)—Inhibition by negation and by substitution have a wide application to the formation of conduct—(E)—Each kind of punishment has a peculiar relation to the child's sense of self—Pain becomes a reformatory agent by association and reflection—The various kinds of punishment should be judged by their suitability for use in schools.

§ 31. (pp. 131–133.) Conclusions regarding discipline—The purpose of all punishment is reformation—Punishment is only a small fraction of discipline—The formative influence of being interestedly busy is supreme—The growth of the child involves a change in selfhood, out of which conduct springs and which is, in turn, formed by conduct.

CHAPTER VIII. THE RECITATION.

Pp. 134–150.

§ 32. (pp. 134–135.) What the recitation now is—The literal meaning of recitation (saying over again) is still fairly descriptive of what the recitation is in many schools—Repetition has survived as a school method because of social habit and also because the fluency to which it leads is often mistaken for knowledge.

§ 33. (pp. 135-138.) What it is to teach—Changed behavior is the evidence of one's having learned—Back of changed behavior there must be changed mental life—The change includes both sequence and character of mental activities—Teaching is influencing the sequence or the character of a person's activity.

§ 34. (pp. 138-146.) The relation of reactive behavior to teaching and to learning—Reactive behavior is the source of consciousness and of the sense of selfhood—James' pedagogical maxim "No impression without its correlative expression," is sound—The child's reactive behavior both forms and reveals his mental activity—The capacity of the child to form habits varies—The verbal reaction is insufficient for educative purposes—Reactive behavior should precede the mastery of symbols—The study of words is profitable to children only when they summarize a wide range of concrete experience—The forms of reactive behavior (given on p. 141) are the basal things in the motor life of mankind—To become genuinely social the child must participate in this motor life of the race—Sensory and motor children differ widely in regard to reactive behavior—It is through reactive behavior that the child gets his sense of himself, his sense of others, and his knowledge of things.

§ 35. (pp. 146-147.) The means at the disposal of the teacher to secure reactive behavior—All the teacher can do is to stimulate some nerve-ending of the child—The human voice is the best educative stimulus and may take the form of a command, a polite request, a suggestion, or a question.

§ 36. (pp. 147-149.) The command and the polite request—The command implies that another shall make his will conform to the will of the one who utters the command—The negative element in the command is abstract—Commands should not infringe on the child's rights as a child—Depraved children have usually been made so by inhuman treatment—The polite request is usually more educative than the command.

§ 37. (p. 150.) The suggestion—The suggestion merely offers a course of action which becomes the child's own by his own choice—Teachers should be adepts in the use of suggestion.

CHAPTER IX. THE RECITATION (CONCLUDED).

Pp. 151-183.

§ 38. (pp. 151-179.) The nature and kinds of the question—The question is to the teacher what an artist's brush is to him—The fundamental purpose of the question is to lead the child to

think for himself—Questions may be considered from the points of view of their form, the teacher's purpose in asking them, or the kind of thinking they require to answer them—1—On the basis of form—Direct questions provoke too little response and do not force the child to forge a connection for himself—Indirect questions require complete statements in answer and also require that one shall forge a connection for himself—The leading question means that the teacher does the thinking for the pupils—Alternative and elliptical questions have a very limited value—2—On the basis of the teacher's purpose—Testing questions are legitimate and should be indirect in form—Developing and pivotal questions are very important and should have the indirect form—Questions should be definite—The teacher should think out the pivotal questions of a lesson in his preparation for it—The developing questions can not be well thought out definitely in advance of the lesson—Successful oral teaching requires (1) a clear and firm grasping of the new in its organic or pivotal aspects, and (2) a process of successively developing these aspects by supplying knowledge and by the use of questions which, based upon the past experiences of the children, lead them to construct the new—Clarifying questions are invaluable when pupils encounter difficulties in studying—The guiding, or signboard, question has a legitimate place in the schoolroom—3—On the basis of the kind of thinking required to answer them—(a)—Natural thinking exists in two forms, contiguity and similarity—Contiguity, based on spatial or temporal *togetherness*, does not long excite interest but is valuable when symbols are to be connected with their appropriate contents—Similarity arises when the mind begins to connect its experiences together because of elements of internal identity—Thinking by similarity may be stimulated by careful assignments, suitable class questions, large use of comparison, and the general attitude of the teacher—(b)—Causal thinking is based upon both contiguity and similarity—There are two kinds of causation, objective and subjective—The fact that the child is prepared to think from effect to cause before he is prepared to do the reverse has an important bearing on the matter of method in lower grades—Memory of form strongly insisted upon destroys causal thinking—Memory of content tends to stimulate causal thinking—Curiosity leads to causal thinking—The teacher should organize the subject matter according to its causal connections—To be known, a thing must be tied-in with other things—(c)—Logical thinking is necessary sequence, in harmony with the nature of things

—Some thinkers regard the necessary truth thus revealed as external while others regard it as subjective—Logical thinking is implicit in perception and simple judgments of fact—Mathematical problems are essentially logical—There are mechanical aspects of arithmetic—Imaging the conditions of an arithmetical problem is the best way to get at the logical relations involved in it—English grammar has obvious logical aspects—Parsing and analysis have been so highly esteemed because they imply a logical viewing of the words which make up sentences—When pupils get only the form of grammar their study of it is useless—The power of ready and accurate interpretation and formation of sentences is the valuable outcome of grammatical study.

§ 39. (pp. 179-182.) The assignment—The pupil must become his own teacher—Through assignments the child should grow in power of independent work—Pupils vary at different ages in their power to do independent work—The assignment should be such that the pupil can master it by reasonable diligence—A minimum assignment for all with extras for those who can do more than the others is the best criterion—The assignment should include an aim—And have clearly defined limits—Probable difficulties should be anticipated in the assignment—The assignment should be even from day to day.

§ 40. (pp. 182.) What pupils should be expected to do in their study of assignments—They should get at the pivotal aspects of the things studied about by giving undivided attention—And discover the relations involved.

§ 41. (pp. 182-183.) The relation of the study already done to the recitation—The recitation should make use of what has been learned, but chiefly in new relations—To bring about this reorganization of knowledge demands skill in the use of questions and also insight.

§ 42. (pp. 183.) The relation of the problem to teaching—The teacher should strive to induce educative activity in pupils—Educative activity utilizes old knowledge in new relations—This constructive thinking is really the solution of a problem—Therefore, the teacher should organize and present the material in such a way as to stimulate pupils to constructive thinking.

CHAPTER X. REALISM AND SYMBOLISM.

Pp. 184-200.

§ 43. (pp. 184-186.) Realism is mental activity—Symbolism is the form by which mental activity may be expressed—The child

often gets the bare form from his study in school—Consciousness arises through motor responses to stimuli.

§ 44. (pp. 186–187.) The formative influence of motor attitude—Motor attitude prefigures feeling—Physical training and military discipline are valuable because of the mental tone they impart—Expressive attitudes are formative attitudes.

§ 45. (pp. 187–191.) The character of conventionalized symbols—Conventionalized attitudes are not formative and are imitatively acquired—Symbols have varying reaches of validity—Children have a tendency to invent symbols in their plays—The conventionalized symbol has a wide validity, but is a small, constrained, motor activity—Symbols give permanence and stability to mental life—The symbol is valuable as it expresses an appreciated content and thereby leads to a better command over it—The neglect of the truths of this section constitute the pedagogical blunder of the ages—Realism is the first concern of the teacher.

§ 46. (pp. 191–193.) The influence of realism on methods—Reading has proved very responsive to the demands of realism—The alphabet, word, and phonic methods have been found to be formal if universalized and made into an exclusive method—The changes in the method of teaching geography of the past fifty years have been due to the growing recognition of the demands of realism.

§ 47. (pp. 193–197.) The values of conventionalized symbols to teaching—They constitute an effective, rapid, and definite method of conveying one's thoughts to another—Gesture adds much of meaning to words, for words once had a motor meaning—Expression is a test of thought and necessary to its highest development—When one has acquired the power to translate symbols into equivalent ideas he can broaden his experience to include, ideally at least, the experiences of the race—There is always danger of verbalism—Variety of expression is the best safeguard against verbalism.

§ 48. (pp. 197–200.) Conclusion on the formative influence of motor activity—This formative influence is seen in the physical tone of a schoolroom—"Press against the environment" is a good motto—The higher mental activities are matrixed in motor activity—Habitual motor activity loses its formative power, save in the production of stupidity—The curriculum is recognizing the true place of motor activity in elementary education—Symbolism should always be subordinated to realism.

CHAPTER XI. STAGES OF KNOWLEDGE AND STAGES OF INSTRUCTION. Pp. 201-227.

There are stages, or levels, in the development of the child's knowledge, and these influence the method of teaching.

§ 49. (pp. 201-204.) An analysis of knowledge reveals but two stages in thinking—The difference between an image and a concept is largely one that exists in definition only—No person's thinking is wholly of either type.

§ 50. (pp. 204-227.) Sub-stages of image thinking—A—Wonder and name-getting—Wonder is the attitude of searching for further associations of a given thing—*Blasé* means that the thing does not excite any desire for further knowledge—Wonder leads the child into all sorts of activity—B—Make-believe and fancy—These elements develop early in the child's life—Make-believes are valuable because of their social reference—The child's fancy usually needs stimulating—C—Dramatization, games, and imitation of social activities—These activities are consciously performed—Through imitative performance comes a new sense of selfhood—The elements thus obtained are valuable to the extent of serviceably associated habit—The dramatization of stories yields the best results because of the social element involved—Games involve group coöperation and are valuable because of this fact, because of the stimulus to invent within the rules, the physical exercise involved in them, and because of the permanent disposition to open air enjoyments which they foster—Many social processes should be imitated—Political processes offer a fine field for advanced grades—The necessity for government should be apparent to the child in the school—A spirit of social solidarity should be awakened—Daily political attitude is more important than simply making a great ado over election day—Pupil participation in school government does not necessarily imply an organization like that of the state—Conventional forms of social behavior are easily taught, but there is danger that the child may not enter into their real spirit—The place of industrial and commercial processes is very important—Among these the most important are: tilling the soil, extermination of pests, domestication of animals, weaving, simple domestic activities, making and beautifying things for use in the home, and exchange—Each community has other industrial processes with which the child should become acquainted—Some complex processes should be symbolically performed—D—Individual achievement, distinction, and invention—These elements mingle in the child's life—Some teachers by their method tend to

discourage invention—Invention may and should be stimulated—Self-reliance is the outcome of independent action—E—Causal thinking first arises from sense-contact—Human motive is also a cause to the child—There are no absolute age-and-mental-orders in the child's life.

CHAPTER XII. STAGES OF KNOWLEDGE AND STAGES OF INSTRUCTION
(CONCLUDED). Pp. 228-252.

§ 51. (pp. 228-252.) Sub-stages of conceptual thinking—Concepts come into existence through the reflective activity of the mind—A—Concept forming, classification, and definition—Similarity is necessary to concept forming—Definition is a process of telling what one means by his concepts—Words name objects and also express mental syntheses—B—Judgment forming and opinion making—Judgment is a mental syntheses—The definitive judgment is a judgment of meaning—An analytic judgment simply unfolds what is implicit in its subject—A synthetic judgment adds an element to its subject—Science is the outcome of conceptual thinking—Individuals mean more when interpreted in light of the essential relations implied in concepts—Not all things worthy of being taught have a conceptual character—Concept forming is a very valuable element in mental development—The child may be led to the formation of synthetic judgments by imitation, by discovery, by grading the difficulties, by making large and intelligent use of comparison, by proceeding as slowly as the child thinks, and by a sincere, appreciative attitude of the teacher—As the child grows in power of independent thought, he forms opinions for himself—The teacher has an important function with respect to the child's tendency to form opinions for himself—C—Causal thinking and the formation of personal attitudes—Concepts enable the child to explain things in their causal terms—The child becomes interested in the qualitative aspects of world-forces—This interest is qualitative rather than quantitative—Since the child is interested in these world-forces, he forms personal attitudes toward them—D—Logical thinking and systematization—Through his varied experiences the child comes to appreciate the necessary relations between things—He thus apprehends the inner nature or essence of things—This necessary element in thinking is called the logical—The logical element plays an important part in all inductive thinking—As the child becomes mature the logical relations of things become explicit in his consciousness—Arithmetic and grammar furnish ample scope for logical thinking—These studies

have lost their former prestige because other subjects have come to be taught so as to involve logical thinking—The perception of the necessary relations between judgments reveals to the child the logic of life—The teacher should strive to have the child form a sane and helpful philosophy of life.

CHAPTER XII. INTEREST AND ATTENTION.

Pp. 253-267.

§ 52. (pp. 253-257.) Introductory and descriptive—Interest is the felt value of a stimulus to the self that feels—Uniformity of environment deadens interest—Habit in adjustment is usually the point at which interest subsides—Attention is the adjustment of the self to a stimulus—The mind attends with its ideas—A change in the object is necessary to continued attention—Reflection is a process of self-initiated and exhaustive adjustment to a stimulus—The activity which is initiated by the felt worth of an end is the most educative.

§ 53. (pp. 257-259.) The relation of attention to the formation of the self—The formative influence of involuntary and unconscious attention is very great—A school is designed to secure the attention of children to certain definite things—Attention and interest are closely related in school work—Baldwin's view of apperception shows the clear relation of attention to the formation of the self—Maximum attention means both maximum apperception and maximum organization of the self.

§ 54. (pp. 259-261.) Class attention depends upon what is taught, on the way in which the teaching is done, and upon the personality of the teacher.

§ 55. (pp. 261-263.) Class attention depends upon class interest, the conformity of the teaching to the laws of attention, the motor attitude of teacher and pupils, the technique of the teacher's questions, and the class opinion of the teacher.

§ 56. (pp. 263-264.) Participation is the real secret of class interest and attention—There are reciprocal relations between constructive thinking and interest and attention—Participation means re-discovering, re-believing, re-inventing, and re-living the life of the race.

§ 57. (pp. 264-265.) Habits of attention are formed by repetition of acts of attention—The amount of repetition necessary to the formation of a habit of attention depends upon the vividness of the original experience, or the amount of the self which is involved in the experience—In this process the danger of "closed habits of attention" is very great.

§ 58. (pp. 266-267.) The development of permanent lines of interest is of vital concern—School and life should be a unity—The awakening of permanent lines of interest through school work is essential to the highest efficiency of elementary education.

CHAPTER XIV. THE PROFESSIONAL PREPARATION OF THE TEACHER.

Pp. 268-276.

§ 59. (pp. 268-270.) The teacher should understand social life—To do this, he must understand the heart of history—Present society is dynamic—The teacher should, therefore, understand the ideal tendencies of society out of which social changes come—Ideals prepare one to live effectively in the changed social life that progress inevitably brings.

§ 60. (pp. 270-272.) The teacher should understand the child—In child study there are advantages and dangers—Physical, intellectual, emotional, and volitional development are closely interdependent and are variable in different children.

§ 61. (pp. 272-275.) The teacher should have skill in using the materials of education—The problem for the teacher is the massing of educative materials in such a way as to bring about the maximum social development of each child—Errors should be stepping stones—Criticism should be helpful and truthful—Opportunities for the professional growth of the teacher are very different in country schools, village schools, city schools, and training classes—Blind experience is supplemented by cadetting, work in city training schools, normal schools, and schools of education—The doom of inefficiency in schools seems sealed.

§ 62. (pp. 275-276.) The teacher's conception of his work and his fundamental motive in life have much to do with his efficiency—Consciousness of significance gives dignity to the work of teaching—The fundamental desire of the teacher should be to help forward the life of the race to higher and better levels.

CHAPTER XV. SUMMARY OF THESES.

Pp. 277-289.

1. Education is inevitable.
2. Education ought to be a progressive socialization by participation.
3. This progressive socialization should be both actual and ideal.
4. The various stages or degrees of mental activity may be stated as:

(a) Involuntary experience, imitation, discovery, invention, and self-activity; or as

" (b) Image and conceptual thinking; or as

" (c) Primary and derived activities.

6. The school should be so organized that the child thinks for himself and thus re-creates his race inheritance.

7. The scope of the school should be such that, supplemented as it is by extra-schoolroom experiences, the child builds up a sane view of life and develops an ethical attitude toward the actual and the ideal.

8. The problem is the means, *par excellence*, for rightly conditioning the child.

9. The aim and the pivotal question are problems for the child to solve.

10. The materials of instruction should be organized into units or topics which, when worked out as a series of problems, give the material usually included in such subjects as geography, history, drawing, spelling, composition, etc.

11. The teacher should develop a sense of need in the child and not rely wholly upon the already established interests of the child.

12. Since all consciousness tends to become motor in its consequences, and since the motor realization of an idea integrates it as an element of character, all forms of expressive and constructive experience should be fostered by the school.

13. To be interestedly busy in doing worthy things is the best kind of discipline.

14. When conduct springs from selfishness or meanness, inhibition by substitution is the best mode of dealing with it, but corporal punishment is a last resort.

15. Education is such a complex thing that the school becomes what it should be only when all the forces involved work together harmoniously and effectively

PART II.

ADDITIONAL TOPICS FOR STUDY, DISCUSSION, AND REPORT.

These topics for further study are introduced to afford an opportunity for students to react in an original way to the main argument of the text. The topics are numerous enough to provide work for a dozen or more persons engaged in informal round table discussion. It is believed that the working out of these topics will throw a flood of light upon the text, will give rise to a keener insight into the problems and processes of elementary education, and will give birth to a sense of power that can never come from the mastery of a book. Worked out in connection with the text, these topics will probably prove more valuable than the text itself.

A person, or even a group of persons, working in this way should feel no sense of discouragement over the fact that not all of the exercises yield answers readily. A list of references in which answers could be found would defeat the fundamental purpose of these exercises, viz., to furnish a stimulus to constructive thinking. The Analytical Summary and the Index will be found helpful in tracing out the references of the text to the topics given.

CHAPTER I. INTRODUCTORY.

Pp. 11-17.

1. Make a list of the things done by a child of elementary school age during a half hour in school and a half hour on the playground or at some kind of work. Classify them as (1) Natural, and (2) Acquired (learned) Actions. From whom and how has he learned each? If possible, compare with the results of a similar study of a child under three years of age. How can you decide whether a given thing has been learned or was inborn in a child?

2. Write an account of how some elderly person of your acquaintance has learned some particular new thing.

3. Show why each description of the process of education (given on p. 12) is valid from the point of view of the one that gave it.

4. Consider the conditions that existed where you now live when the Indians or the early pioneers lived there. Write a sketch of "Indian Education" or "Pioneer Education in the Home and in the School," showing in detail the things which the child needed to know and how he was taught them. Compare the list of things to

be learned then and now. At what age did a child then become mature? At what age now?

5. Write an account of how a teacher organized and conducted a school in pioneer days. Contrast the curriculum with that of the present day. How do you explain the difference? What was the method of teaching in the pioneer schools?

6. Show why "the formation of socially efficient moral individuals" demands that the teacher be a specialist in ethics, psychology, and the subject matter to be taught.

CHAPTER II. THE AIM OF EDUCATION AND THE FUNCTION OF THE SCHOOL. Pp. 19-32.

1. Write out, as fully as possible, the "filling" given by each of the school studies.

2. Trace out in detail the steps in the change of opinion in a social group with respect to some particular thing. What part of this change is due to the means of communication?

At the close of the Revolutionary War many people thought the union of the Colonies would be shortlived. It was held that the Colonies could not agree because of the physical impossibility of getting together frequently enough to understand each other. Estimate, in light of the above, the part played by invention in the development of the idea of national unity. Read Emerson's essay on "The Fortune of the Republic."

3. A radical is one who believes that some one policy, or principle, or truth would, if allowed to control, improve the existing order of things. A conservative is one who is satisfied with an aspect of the existing order of things. Each person is, therefore, a radical with respect to some things and a conservative with respect to other things. What effect has diversity of employment upon the development of radicalism? Of conservatism? Which predominates in the country? In villages? In cities? How is the above shown in the educational ideals of the separate groups?

4. How has it come about that so many people believe in the "knowledge ideal" of education?

5. It is often asserted that the congenitally deaf seldom, if ever, become thoroughly humanized. Explain why this might be true.

6. Make a list of the ideals of what a number of children desire to become when grown up. Compare these ideals on the basis of sex, age, motor ability, breadth of experience, and influence of literature read. Which is the more influential in determining ideals

at different ages in boys and in girls: the influences of the home, of the school, of industrial society, of literature? What does this analysis reveal regarding the present influence of the school? To what extent does the series of ideals thus analyzed correspond to the development of racial ideals?

7. Write a detailed account of what is included in the educational ideals of (a) a country community, and (b) a city of five thousand or more population. Explain both the elements of likeness and of difference.

8. Look up the "New England Academies" and define their ideal. Why do so many people of independent means regard the education of girls as "a set of accomplishments"?

9. What difference is there in the end usually sought by studios where music and drawing are taught and by training in these things in the public school? Under what conditions would piano lessons be given regularly to all pupils in the public schools?

10. Analyze out the "institutional participation" which is in a child's experience before he comes to school. This analysis lays bare what aspect of school education?

11. Write a defense of "Occupations" as a school subject, showing (a) the necessity for it and its values, (b) the grades through which it should extend, and (c) the sort of occupation that is suited to pupils in the several grades.

CHAPTER III. THE MEANING OF EDUCATION.

Pp. 33-43.

1. In the quotation from James (p. 33), education is said to be *organization*, and not simply *acquisition* of habits. What does this distinction mean, and how does it influence one's conception of education?

2. Taking the list of learned things (found in topic 1, under Chapter II above), show upon what natural tendencies (or tendency) each is based. When your list of "natural tendencies" is complete compare it with the one given in James' *Talks to Teachers*, pp. 45-63.

3. Collect a dozen or more cases, from four or five successive grades in a school, of unthoughted action on the part of girls and boys, and explain the result in terms of the explanation given on pp. 36-37 of the text.

4. Taking the data collected regarding children's ideals (topic 6, Chapter II, above), explain the whole mass in terms of world-building. What are the various ways in which one may build a world?

5. It is often said, "Desire is everything." Defend this proposition in terms of the argument outlined on pp. 39-40 of the text.

6. Show the necessary relation of sequence which exists between the successive stages of socialization (as given on pp. 40-43.)

CHAPTER IV. THE MATERIALS OF EDUCATION.

Pp. 44-62.

1. In connection with topic 3, Chapter II (above), explain the long survival of the catechetical method of instruction. Why did formal methods of teaching outlive the ox-cart? Under such methods of teaching what subjects were most readily taught? Give two explanations of why the early schools of our country devoted themselves so exclusively to certain of the language studies.

2. What were the reasons that led to the introduction of geography, history, literature, nature study, and construction work into the schools? How did the first results compare with the reasons urged for their introduction?

3. Explain what is meant by the phrase, "psychologically at home in geography." What more than a knowledge of geography is implied in this phrase? What is meant by *mature*, as applied to a person?

4. Soap making is, as now carried on in large factories, a "scientific process." How was soap made by the pioneers? How did it become a scientific process? Compare your answer with that of Spencer (given in substance on pp. 54-55). What are the prospects that teaching will soon become a scientific process?

5. What value had the catechism and the *New England Primer* as means of religious training? To what extent is it defensible to have formal instruction outstrip experience in religious training?

6. Accepting as true the statement, *Realities only are educative*, visit a school; make a list of things done by the pupils; divide these into the following classes: (a) realities, (b) derived from realities, (c) beyond the children. Why are children usually so anxious for recesses and holidays?

7. Taking the following statement as a criterion, visit a school and note the proportion of time given to each kind of work: The child should re-create his race inheritance and gain the power to convey his thoughts to others.

8. Why are painting, music, and literature regarded as being so rich in cultural values? If these things were universally appreciated and enjoyed, what effect would this have on their culture value?

CHAPTER V. METHOD IN EDUCATION.

Pp. 63-85.

1. Observe a child about a year old for about an hour, keep-

ing tab on the various things it does. Classify these things into the forms of involuntary experience (given on pp. 64-67) and conscious imitation. Or, have eight people observe, each taking notes on a certain kind of activity. On the basis of the results thus obtained, estimate the values of involuntary experience in giving to a child his basal mental contents.

2. Observe a child about three years old, as above, and make a list of the things which it has imitatively acquired as these appear in its actions. Or, select a child in the first grade for observation.

3. Similarly, watch a group of children for a longer period, keeping count of their discoveries, and grouping them as accidental and planned discoveries.

A boy in school found a way to remember the table of 9's. The last digit in the successive products diminishes from nine to zero. The sum of the digits in the successive products is nine. The first digit is one less than the multiplier and increases by one in the successive products. This boy, for illustration, when asked, "Seven times nine are how many?" thinks, "Seven less one is six; six from nine leaves three; sixty-three." What kind of discovery was this? What value had it for this boy? What value would it have for others who learned it imitatively? In what ways is the boy's plan an inconvenience? (Compare with the idea expressed on pp. 140 and 165.)

4. Observe children at play and collect illustrations of inventions. In what sense is literature, especially the fairy tale, the myth, *Robinson Crusoe*, *Aesop's Fables*, etc., really an invention? How should the child learn literature, by repetition or by invention?

5. Show that an act which might, if performed by a child, be called self-activity would not, if performed by an adult, deserve the name at all.

6. Write an account of how object lessons were conducted when you were a pupil in the lower grades and compare that method with the one now in vogue.

7. Write down a list of the experiments which you remember to have performed in a course in physics or chemistry in high school, and then compare this list with the actual list. Explain your discovery in light of what is said regarding experiment on pp. 77-79.

8. Watch pupils in the successive grades at their school work, and note how much, relatively, there is of each of the kinds of thinking listed on p. 85. Do the same when they are left to themselves. Compare the results and say whether you think the school is organized in accordance with the way in which the child's mind naturally develops.

CHAPTERS VI AND VII. DISCIPLINE.

Pp. 86-133.

1. Note children just entering school to see if you can tell what theories of the moral nature of the child are held by their parents. Give numerous illustrations of the principle, *Reactive conduct forms character*.

2. Find cases in which children fall into the successive stages of selfhood (pp. 94-101) and note things that are characteristic. If possible, study a group of boys that is just becoming a "gang," and also a group that is seeking distinction by "dare" feats of all kinds. Does the change in social attitude precede, develop along with, or follow after, the characteristic motor activity of the stage?

3. Taking the course of study with which you are most familiar, compare it with the standards set up on pp. 104-107. If there are any deviations, explain why they exist.

4. Compare the qualities of the best teacher of your acquaintance with those given on pp. 107-110. What qualities should be added to the given list?

5. Make a study of the coöperative activity that takes place in a given school and compare it with that given on pp. 110-114. What are the advantages of such coöperative activity and what are its most obvious dangers?

6. Make a study of what are called "school troubles," that is, cases in which the patrons and the teacher do not work together harmoniously, and classify the basal causes of the trouble.

7. Show that each of the prevalent school offenses is really a deviation from the ideal (as given on p. 120) of what the pupil's conduct should be. Analyze the prevalent offenses to see if any causes or motive are found that do not fit into the list given on p. 122.

8. Find in your own experiences instances in which the separate kinds of punishment, listed on p. 127, have been applied to you. With regard to each, state clearly just what the offense was, what led you to commit it, what punishment was inflicted, by whom, its severity or lenity, and *how it affected you* both as regarded your attitude toward the one who administered it to you and toward similar possible offenses. (If this exercise is worked out carefully by a number of people, the results for each kind of punishment as related to a given kind of offense can be tabulated, and thus an estimate of the value of the different kinds of punishment can be arrived at and a comparison with the conclusions of the text be made.)

9. It is sometimes said of one that he succeeds in teaching but fails in discipline. Compare this statement with the one made in

the text, "Nine-tenths of the problem of discipline is solved if children are kept interestedly busy doing worthy things."

CHAPTERS VIII AND IX. THE RECITATION.

Pp. 134-183.

1. Which of the forms of reactive behavior, given on p. 141, are most suitable for use in schools? Write out a defense for the use of each one which you feel should go into the curriculum of the elementary school. How does one become many-sided? Narrow? What occupations make for many-sidedness? For narrowness?

2. Write out, in detail, a case known to you in which arbitrary commands have resulted in hardening the one commanded. Make a list of "children's rights."

3. (a) Collect questions heard in a schoolroom on different subjects, analyze and classify them on the basis of the outline on p. 152, keeping careful count of each by subjects. In which subjects are the questions the poorest? Explain this either in terms of the inherent difficulty of the subject or of the teacher's meagre mastery of it. To what else might this poor questioning be due? (This exercise should be performed by several people, each one observing different teachers.)

(b) Some people say that they, being blindfolded, can judge accurately of a teacher's efficiency by simply hearing the questions asked, and that they can also judge accurately by reading a stenographic report of a class exercise. What do you think of this standard of judging a teacher's efficiency?

(c) Try to group the various kinds of mental activity (given on p. 85), and the stages of selfhood (given on pp. 94-101) under (a) natural thinking, (b) causal thinking, (c) logical thinking (given on pp. 163-179). Explain how they happen to fit together or fail to fit together, as the case may be.

4. Make a study of the kinds of thinking done by pupils in various grades. What kind predominates in the successive grades? How do you explain this? Which are the best at causal and logical thinking in the several grades, boys or girls? Explain your answer. How about logical thinking among men and women? Give reasons for your answer. In what sorts of things are boys, girls, men, and women most interested? What is the relation between ability to think in certain ways and prevailing interests?

5. Compare the assignment actually made by a teacher with the understanding which a class has of what the assignment is. Explain the result of several observations based on assignments that

range from simple to complex. What maxims, or principles, should control the assignment?

6. Make a study of what children actually do in their study of assignments. What is the proportion of real study to dawdling?

7. Observe a recitation noting how much of *re-cit-ing*, and of constructive thinking there really is in it for the pupils.

CHAPTER X. REALISM AND SYMBOLISM.

Pp. 184-200.

1. Collect from your own experience and that of others (including children) instances in which bare symbolism was all that the supposed learner got from his efforts. What tendency would a catechetical method of teaching have?

2. Write out cases in which children have used arbitrary symbols in their plays or in stories made up by them. Also, write out cases in which children have developed a language of their own or have had "ideal playmates" and a language for them. All these cases show what tendency?

3. Describe the method by which you were taught to read or the method you use in teaching reading and estimate the relative amounts of realism and symbolism there was (or is) in it for the learner.

4. The best "form" for a runner, a hurdler, a jumper, a discus hurler, or any athlete, is that way of doing the thing in question which will lead to the best achievement of which the person is capable. Similarly, in geography, the child should become familiar with the form which will summarize his thinking and which is, at the same time, a stimulus to further thinking. Why then does one so easily forget the latitude and longitude of places, the rules for the subjunctive in Latin, the dates of events in history, etc.? Make a list of the things which you find children readily forget and explain why they forget them.

5. Make a list of your own experiences in which interest has been an outgrowth of concrete activity.

CHAPTERS XI AND XII. STAGES OF KNOWLEDGE AND STAGES OF INSTRUCTION.

Pp. 201-252.

1. Make studies of children who are in the several sub-stages of thinking outlined in the text. Connect these sub-stages of thinking with the stages of selfhood (pp. 94-102).

2. Make a special study of a group of eighth grade pupils to discover how much acquaintance with and control of racial activities (r to x , pp. 217-221) they have. On the basis of the results ob-

tained, form a conclusion as to the socializing worth of their present education.

3. Make a special study of a group of children that seem to be in stage 4 (pp. 98-99) and sub-stage D (pp. 221-224). Make a list of the foolish things to which children are led by their love of distinction. What relation has the child's ascendant desire to "obstreperousness" at school? What is the effect of closely prescribed conduct and study upon future originality?

4. What relation is there between personification and causal thinking from sense-contact?

5. Why are there contradictory views regarding the value of definition as a school exercise?

6. Collect evidence to show that opinion-making is epidemic among children during certain stages of development.

7. What is the difference between opinion-making and the formation of personal attitudes? Connect the latter with the desire for economic independence and the stage of loyalty (pp. 99-101).

8. Write a defense of the following proposition:

All logical thinking demanded of pupils in the elementary school should be directly based on concrete experience or upon clear definite images derived from such experience.

Examine a series of school arithmetics, an English grammar, and the portion of a text on geography devoted to mathematical geography in light of the foregoing, and make a list of the things that do not conform to the requirements set up. If any things are found that do not conform, explain why they are included in the books.

CHAPTER XIII. CLASS INTEREST AND ATTENTION. Pp. 253-267.

1. Make observation of classes at work and note whether the interest and attention are found to depend upon the things outlined on pp. 259-263.

2. Note for a considerable length of time the work of a group of school children and make a list of the permanent lines of interest that seem to be set up by their work.

Inventory your own permanent interests, and note the ones that had their origin in your school experiences. Compare this list with others obtained by questioning some of your friends. What conclusion do you draw as to the efficiency of the school in this respect?

CHAPTER XIV. PREPARATION OF THE TEACHER. Pp. 268-276.

1. Estimate a half dozen teachers, including yourself and the best teacher of your acquaintance, in light of the main points of

Chapter XIV and of the Preface of this book. What additional criteria for the efficiency of the teacher do you set up?

CHAPTER XV. SUMMARY OF THESES.

Pp. 277-289.

1. Write your own argument to prove or disprove each of the fifteen propositions which form the substance of Chapter XV.

2. Using the Index and the fifteen propositions of Chapter XV, collect the material which is summarized from the book by these theses.

3. Make a list of the "educational reforms" that you know something about, and judge them by the appropriate propositions in Chapter XV. Why are so many so-called "reforms" spasmodic and transient?

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QUESTIONS FOR STUDY ON
ELEMENTARY EDUCATION;
ITS PROCESSES AND PROBLEMS

BY

J. A. H. KEITH

These questions on the text are introduced to afford an opportunity for students to test their mastery of the matter studied. They will be found to be very complete and close. They are such questions as a teacher might ask a class which was studying the text in a thorough way. While nearly all teachers who use the book will prefer to ask their own questions, the ones here given may prove of service to those who have not the time to make adequate preparation for the hearing of groups of people who are studying the text, and to those who work alone.

CHAPTER I. INTRODUCTION.

Pp. 11-17.

1. Give and illustrate an engineer's definition of education. What is true of one who has no education except that implied in this definition?

2. Show that education is the most universal concern of mankind.

3. Give and illustrate three descriptions of the process of education. What element must be added to these descriptions because of the fact that society organizes and supports schools?

4. What is the fundamental problem of those who have charge of schools? This problem separates into what? From what sources do the various answers to this fundamental problem come?

5. What solution of this fundamental problem is often advanced? What are the objections to this solution?

6. What must be true of one in order that he may be an artist-teacher?

7. What is meant by "motor knowledge" of psychology? Of the aims of education?

8. What alternatives are open to one who writes a book for teachers? Discuss the plans to which these alternatives lead. What is the purpose of this book?

CHAPTER II. THE AIM OF EDUCATION.

Pp. 19-32.

1. What is education as a process? What determines the sequence of one's ideas? What determines the character of ideas? What relations exist between the sequence and the character of ideas. The course of study implies what purpose?

2. What questions are asked regarding the process of education? Show how the mere existence of a social group implies a social ideal. Show the manifold social connections one may have. What is the outgrowth of each social connection?

3. Show how a group educational ideal develops. What happens when there are many separate or complex ideals? Show how ideals depend upon occupation and how they are modified.

4. Give the summary regarding (a) the origin, (b) the efforts at realization, (c) the complexity, and (d) the variability of the group educational ideal.

5. What statement of the educational ideal is universal? What two kinds of functions are involved in this statement? Give several formal statements of the aim of education and show why each is formal.

6. What is meant by the dynamic character of the aim of education? What relation is there between the spiritual element of the educational ideal and the social life of the group? Show how social feeling develops.

7. Show how the present educational institutions and curricula have been established. Give various illustrations of social habit and show how social habit affects educational ideals. Why are schools usually the last social institutions to be regenerated? What things are cited to show that the educational ideal is dynamic?

8. Discuss the consequences of the segmental character of social life. What two kinds of participation are essential to social life? What is language and of what value is it? What reasons are there for each child's having a motor acquaintance with the typical forms of human activity?

9. How do ideals arise? How has the sense of the brotherhood of man arisen? How does it become refined? What is opposed to this sense of brotherhood? How is the aim of education expressed?

10. Show how the child gains that control over nature which is exercised by his group. What social value is there in such control? What is the usual limit of the controls which a child is expected to gain? What social value is there in gaining these controls?

11. What is the relation of these adaptations to nature to the growth of social and mental life? What are the social values of symbolism? What are the two kinds of control over symbolism and their values? What is one difference between the "old education" and the new? What are the values to a teacher of learning how deaf mutes are taught?

12. What is the relation between social life and institutions? How does one become a member of an institution? What are institutions? What are the socializing values of being a member of a family and of playing games?

13. Sum up the conditions under which social participation is possible.

14. What economy is there in a school? What things are most readily taught a number of persons at once? What division was there, in early times, between the things taught in the home and in the school?

15. What was the ultimate motive in establishing schools? Why do missionaries conduct schools? What led to the founding of the older colleges and universities of our country?

16. Under what conditions do private schools exist? How is the changed character of the schools of to-day accounted for? What principle is coming to dominate in the selection of the things to be taught in the public school? Why are secondary schools developing courses that prepare for economic efficiency?

17. Why does the public school exist and for what does it stand? What, therefore, must the curriculum include? In what ways is knowledge inadequate? What is the right basis for judging of the efficiency of a school?

CHAPTER III. THE MEANING OF EDUCATION.

Pp. 33-43.

1. The meanings of education are found in what? Why are there differences regarding the meaning of education? Why should these differences be studied?

2. Give James' definition of education and show how the view expressed by it arises. Show the physiological basis of habit. What goes on in the brain as separate habits are established? How do tendencies to behavior arise?

3. What is meant by mental habit? What is the self? Show how arithmetic implies an organized set of habits and of tendencies to behavior.

4. How may this theory (James') be interpreted? What ob-

jection to it if it be so interpreted? What relation between brain activity and mental activity must be conceded? Why, then, look for a further description of the process of education?

5. Give the natural-tendency-grafting view of education. What is the relation of natural tendencies to the possibility of education? What limit is there to the things that may be taught a child? How are undesirable tendencies to be treated? What is the objection to this description? The description is valid for what?

6. Give Davidson's view of the process of education. What is the law of nervous reaction? What variation from this law is seen in the child's behavior? What is the value of this gap between impression and expression? What is one essential feature of all education?

7. Show what is meant by inhibition in a physical and in a mental sense. What is the influence of inhibition upon conduct? This description ignores what?

8. What is meant by saying that education is a process of world-building? How do objective things come to have an existence for one? What is the process of education from this point of view? What is the objection to this description of the process of education?

9. Give and illustrate the "othering" view of education. What aspect of the educative process does this view fail to include? What is its value?

10. Give the tension view of the process of education. What two stages are there in the process of education? What is the task of the teacher? Of the pupil? What is "estrangement"? Express this in modern terms. What is the objection to this tension theory?

11. Why is an effort made to describe the process of education in another way? From what point of view is this final description given? Explain what is meant by socialization. What two phases of social life are always present in groups? What is the relation between these two phases? Where should all *formative* and *reformative* education begin?

12. Sketch in outline the order of the child's socialization. What relation seems to exist between racial and individual ideals?

13. Discuss the stage of reactive behavior and show its socializing values. Discuss the stage of conscious imitation, showing the difference between symbolical and real activities. Show what socialization takes place through the interpretation of symbols.

14. How do independence and initiative arise? What relation has society to these things? What is the concrete process of educa-

tion? What is meant by the relation of locomotives to life? What values are there in the social view of education?

CHAPTER IV. THE MATERIALS OF EDUCATION

Pp. 44-62.

1. Make clear the social character and socializing value of language (including reading, spelling, writing, drawing, and grammar), arithmetic, geography, history, literature, construction work, and nature study. What is the effect of social changes upon the course of study?

2. Show clearly the functions of institutions, industries, sciences, and arts in education, and how the mastery of them socializes the individual.

3. Show that one's education is a process of learning to act in harmony with natural, institutional, ethical, and religious laws.

4. What is the fundamental duty of every mature person? What things make up the materials of one's education? Under what conditions do books have an educative value? What gives an educative value to the subjects taught in schools?

5. What is knowledge? What is meant by transient and permanent knowledge? What makes knowledge permanent? What is meant by character? By culture? Make a definition of culture. Why is it that much of one's knowledge has little true formative power? Why are there constant efforts to establish an aristocracy of culture? Show the interrelation of knowledge, culture, and character.

6. What two aspects do all materials of education have? What must the child do to become social? What is the great pedagogical blunder? What has been the purpose in analyzing the materials of education in various ways in this chapter?

CHAPTER V. METHOD IN EDUCATION.

Pp. 63-85.

1. What is method? Method is based on what? How does the mind learn a new thing?

2. What is meant by involuntary experience, spontaneous action, reflex action, and sensory action? Illustrate each.

3. What is meant by physical impulse? By mental impulse? What are the physical conditions underlying instinct? Explain "physiological suggestion."

4. Show fully what is meant by "sensori-motor" and "ideo-motor" action. How is the connotation of words to be explained? Show how consciousness comes into existence through involuntary experience. What is consciousness at this stage?

5. What seems to dominate in all this involuntary movement? How is the fact that the muscular response is greater than the stimulus explained? Show that the mind is not simply a picture of the stimuli that have played upon it.

6. Explain analysis and synthesis. What two phases has conscious imitation? What is the outcome of the child's imitations? What things must be learned by conscious imitation?

7. What is meant by discovery? What are its two types? Chance discovery of the causal type has what value? Illustrate fully how planned discovery goes on. Why can some people discover so few things?

8. How does the comparing of the result reached with the hypothesis make knowledge permanent? What must be true of one's purpose in this trying to discover? To what sorts of things does discovery usually relate? Which, in general, is the more educative, discovery or imitation? Why? What are the qualifying conditions as to the use of discovery as a schoolroom method?

9. What is invention? Illustrate your definition by the case of the cotton gin. What does a puzzle reveal? From the psychological point of view, what is invention?

10. All mental activity depends on what? Under what condition can deaf-blind children not be taught? What is the essence of mental development? What is the function of the school? How can originality be secured? How do thoughts become communicable? What, then, are two aspects of mental development?

11. What is observation? What did "object lessons" sometimes become? What was true of the manuals of experiment? What is original work? A rapid rate of experimentation loses what valuable mental element? How do the universities develop original thinkers?

12. Reflection has what various meanings? What is meant by doing? Habitual doing is valuable under what conditions? What is true of selective thinking in the several industries? What is the ultimate basis for all valid thinking? This truth makes what demand upon the course of study?

13. What do the Herbartians claim for the Formal Steps? Briefly outline the argument for these steps and name and describe them. What are the objections to the Formal Steps as a uniform method of teaching?

14. Method must conform itself to what? Name the various ways of learning and tell what each means. What, then, is method?

CHAPTERS VI AND VII. DISCIPLINE.

Pp. 83-133.

1. What is the aim of education? What determines conduct? Compare instruction and discipline. Why is discipline a positive thing? What things make discipline difficult? What is the fundamental aim of discipline? What is the fundamental principle of method of discipline? Illustrate this principle in various ways.

2. Sketch four theories of the moral nature of the child and show how each theory works out into a plan of discipline. Write out a summary of §28.

3. What is meant by stages of selfhood in developing children? Sketch each stage in outline and summarize the outcome at the successive levels. What is the bearing of these facts upon the character of discipline and upon the order of studies?

4. What is meant by organization and management? What is meant by the mechanical phases of school organization? What is the ideal with respect to seating, lighting, heating, and ventilating? What things must be considered in making a program? Give and illustrate the most important laws of fatigue.

5. What is meant by the spiritual phases of school organization? What are the principal ones? What does the course of study indicate? What studies appear in a course of study? What does each stand for? What reasons are there for teaching the separate studies? What is the effect of social progress upon the curriculum of the school? Why is the order in which topics are presented important? What is the law of spreading interest? How should the teacher regard the course of study?

6. Why is the teacher so important? Show this in detail and analyze out the qualities a teacher should have.

7. Sketch in outline the various ways in which coöperation may be aroused and utilized in school.

8. Show the possibilities that exist in connection with the decoration of the schoolroom and school grounds. How do all these matters relate themselves to discipline? Work out several applications of the laws of active and passive impressions.

9. What are the various kinds of punishment? Show how each affects the child's sense of self and discuss the conditions under which each may be advantageously used.

10. What is the relation of punishment to discipline? What is the secret of successful discipline? Write a summary of the idea of discipline advanced in the preceding pages.

CHAPTER VIII. THE RECITATION.

Pp. 134-150.

1. What is the literal meaning of recitation? How was the term probably first used? Why was this method applied to subjects other than Latin? What is true of Chinese schools? How large a fraction of time is now spent in having children *recite* their lessons?

2. Show how nature teaches human beings. Discuss unconscious teaching by persons and things. Show how a teacher proceeds in teaching any fact. What is the evidence that one has learned? What does the teacher do? Summarize the discussion under the headings, (a) What is it to teach? (b) What is the evidence that one has learned? (c) What has the teacher done in teaching?

3. What should the recitation period be? How does one come to assume an attitude toward any particular thing? Why is James' pedagogical maxim a sound one? For what two purposes should the child's reaction be used? When is repetition valuable? What of the child's capacity to form habits? What is the outcome of reactive behavior?

4. Reproduce the outline of reactive behavior and show how each is formative as well as expressive. What shall be said of the sufficiency of the verbal reaction for educative purposes? When does the transition to the use of symbols come? Why is there constant danger of verbalism in elementary school work?

5. Show the relation of the forms of reactive behavior to the life of the race, and the influence of each in humanizing the child. What are the best humanizing materials?

6. What is the relative educative worth of freedom and accuracy? In what ways do children differ as regards their reactive behavior? What has been shown, in this section, regarding the value of reactive behavior?

7. How is it possible for one person to teach another? How can the teacher stimulate the pupil to reactive behavior?

8. What is a command? What is true of the negative command? Why do commands often imply merely passive acquiescence? What happens when parents or teachers command just because they have authority? What is the polite request? Why is it usually better than the command?

9. What is a suggestion? How does it differ from the command and the polite request? What is really desired in the child's behavior and thinking?

CHAPTER IX. THE RECITATION (CONCLUDED).

Pp. 151-183.

1. What is the importance of the question to the teacher? What is the fundamental purpose of the question? Why are questions classified from three points of view?

2. What are direct questions? What are the objections to them? Show that the use of them is indefensible in teaching. What are indirect questions? What do indirect questions require a child to do in order that he may answer them? What are textbook questions? Why are they objectionable?

3. What is a leading question? Give illustrations and show that a teacher should not use such questions. What are elliptical questions? What are the objections to them? What is an alternative question? What is the objection to the frequent use of such questions? What is the best form of question and why?

4. What are testing questions? What is the proper field for their use? What form should they have? What are developing questions? Illustrate what is meant by definite questions. What are pivotal questions? What relation do they bear to developing questions? What are the two requisites of successful oral teaching? What is required of a teacher in order to be successful in his use of questions? The meaning and place of the clarifying and guiding questions? Summarize what has been said regarding questions from the standpoint of the teacher's purpose.

5. What is the final test of the value of a question? What are the various kinds of thinking that may be aroused by questions? What is meant by contiguous association? What things are remembered by contiguity? What meaning is there attaching to contiguity as such? What is the argument of the *schoolmasters*? How does mechanical thinking originate? What things should become mechanical and why?

6. How does thinking by similarity arise? How may the teacher stimulate his pupils to thinking by similarity?

7. What is meant by causal thinking? Illustrate this matter fully. What is the peculiarity of a causal fact? What is the difference between objective and subjective causation? What sort of causal thinking is the child first fitted to perform? What principle is the outcome of this fact? What kinds of questions are suited to bring about thinking by causal connection? What is the relation of memory and memorizing to causal thinking? What is the relation of an aroused curiosity to causal thinking?

8. What is the relation of the "suspended judgment" to causal thinking? What is meant by organizing a topic according to its causal connections? How can a thirst for knowledge be aroused in the child?

9. What is meant by "logical"? Illustrate by a syllogism of your own. What insight does one gain through logical thinking? Show how the solution of arithmetical problems requires and develops logical thinking. What is the relation of invention to logical thought? What, then, are the values of the study of arithmetic?

10. Show how logical thinking is necessary in English grammar. Why have parsing and analysis been held in such high regard? What is the difference between language lessons and grammar? Summarize what has been said on the subject of questioning.

11. How do pupils grow in power of independent study? What importance, then, should attach to the assignment? What principles should control the assignment? What should pupils do in their study of assignments? What relation should the work previously done bear to the recitation? What is the secret of successful teaching? How may this end best be reached?

CHAPTER X. REALISM AND SYMBOLISM.

Pp. 184-200.

1. What is meant by realism and by symbolism in teaching? Illustrate each fully. How does consciousness become organized? Show how motor attitude prefigures feeling. Why is it that military schools are beneficial to some boys? What is the conclusion regarding the origin, existence, and tendency of consciousness?

2. Why is it that conventionalized activities are not formative? Show how symbols have varying degrees of validity. Show how a child may use arbitrary symbols to express a meaning. What are conventionalized symbols?

3. How do conventionalized symbols give permanence and stability to mental life? What values have conventionalized symbols? What is the fundamental pedagogical blunder of all ages? What is the Alphabet method of teaching reading? The Word method? The Phonic method? What other methods are used? What are the conditions under which a child will most quickly learn to read?

4. How has the conception of realism influenced the teaching of geography? Discuss the values of conventionalized symbols to teaching. Why must teaching always consider symbols? What is verbalism and how may it be safeguarded against?

5. Which should precede, in instruction, form or content? Why? Show how activity begets thought. What is the outcome

of active participation in things? When does action cease to be educative? What is the cause of an increasing use of motor activity in elementary education? What does the mind do with the data obtained through motor activity? What is the true relation of thought and symbols?

CHAPTER XI. STAGES OF KNOWLEDGE AND STAGES OF INSTRUCTION. Pp. 201-227.

1. Why should the teacher study the stages of mental growth? Show the connectedness of mental life. Study the outline (p. 202) in connection with the three paragraphs following, and then write out the outline. What different types of mind are there? Show what outcome there is to the wonder and name-getting stage.

2. Sketch the make-believe and fancy stage. What is the value of dramatization? What is the relation of conscious imitation to the development of independence? What is the "principle of serviceably associated habit"? What things should be dramatized?

3. What is the nature of a game? What are the elements of value that come from games? What relation does power to invent bear to success in games? What importance attaches to the playground? Why? What is true of the physical exercise involved in games?

4. In what ways is the imitation of political processes valuable? How should the child feel about government? How may he be led to feel in this way? What are the two stages of political action? What is the most influential thing in the formation of the child's civic attitude? What does genuine participation in the life of the school demand? What is your opinion of self-government for schools?

5. What is the value of the forms of social behavior? What is the Lange-James theory of emotion? What is the application of it to manners? What are the dangers in training a child in manners?

6. What is the outcome of the child's loose imitation of industrial and social processes? Why should this sense of life become more definite? How can this be brought about? What values attach to the tilling of the soil? Control of animals? Weaving? Simple domestic activities? Shelter making? Beautifying things? Exchange? What value is there in a symbolical imitation of complex processes?

7. Show the value of invention in connection with imitation. How does the sense of power to do arise? How do teachers often discourage it? How may the teacher help the "smart" child?

8. Show what is meant by causal thinking in sense-contact terms. What about age-and-mental-orders?

CHAPTER XII. STAGES OF KNOWLEDGE AND STAGES OF INSTRUCTION (CONCLUDED). Pp. 228-252.

1. How does the mind form concepts? How is the concept related to images? What are the essential relations in a concept? What is the reverse of classification? What is definition? Single words have what functions? If getting words were real learning, all method could be reduced to what?

2. Why are words used? Illustrate the difference between judgment and definition. What are analytic and synthetic judgments? How may the teacher stimulate pupils to the formation of concepts? What is the difference between construction and knowledge in science? What of the value of keeping the child thinking about individual things? What of trying to teach everything in this way? What are the values attached to conceptual thinking?

3. What is a synthetic judgment? In what ways may a teacher lead a child to make synthetic judgments? How may constructive thinking be stimulated along with the use of books? Show how the child comes to form opinions about the worth of things and his own duty toward persons and things. What is the teacher's duty with respect to this tendency?

4. How does the child come to think in causal terms? Causal thinking reveals what? What are machines? How is the child's interest in them to be explained? What school studies afford fine opportunities for training in causal thinking? What is there developing within the child along with the power of causal thinking? Why and how does he form personal attitudes? What importance attaches to this process of forming attitudes towards forces, things, and persons?

5. What is the nature of logical thinking? Give various illustrations of thinking that is logical. Show that logical thinking is implicit in perception, memory, and induction. Discuss the values of arithmetic and grammar for developing logical thinking. Why have arithmetic and grammar, in a way, lost their former position in elementary education?

6. How does the child come to appreciate the logic of life?

What is the teacher's duty with respect to this tendency to form a philosophy of life? Summarize the two chapters on *Stages of Knowledge and Stages of Instruction*.

CHAPTER XIII. INTEREST AND ATTENTION.

Pp. 253-267.

1. The future development of the child, at any stage in his career, depends upon what? Give and illustrate the meaning of interest. What things tend to deaden interest? What of habit in this connection? What is the value of a sense of need? What is attention? How does the mind attend? What must be true of the object of attention? What is really the object for the mind? What is reflection? Show the unity of interest and attention in their relation to the work of the school.

2. What is the inevitable effect of attention? How must the school be organized? A maximum of attention implies what? Class interest depends on what things? What determines class attention? Show that participation is the real secret of class interest and attention.

3. How are habits of attention formed? Of what value are they when formed? What is the danger in this connection? What should be true of the interests awakened in school? What is meant by "permanent lines of interest"? What socializing value do these interests have?

CHAPTER XIV. THE PROFESSIONAL PREPARATION OF THE TEACHER.

Pp. 268-276.

1. How, only, can the aim of education be realized? What things regarding social life must the teacher understand in order to have the proper view of his work? What knowledge of the child should the teacher have? What danger in child study?

2. Why does the beginning teacher need guidance and criticism? What should be the character of the criticism? What are the opportunities for the growth of the teacher in country, village, and city schools?

3. Discuss the merits and defects of cadetting, training in city training schools, state normal schools, and schools of education. Why is inefficiency in the schools doomed?

4. What is the significance of the school to the child, the home, and society? What motives are unworthy of the teacher? All institutions are based on what idea? What is the doctrine of service? What should be the fundamental motive of the teacher?

CHAPTER XV. SUMMARY OF THESES

Pp. 277-289.

1. Why is education inevitable? What ought education to be? Discuss the two aspects of socialization, showing what is involved in each. How, essentially, does the mind learn a new thing? What is the value of the mechanical element in education?

2. How may the various stages or degrees of mental activity be stated and what formulations of method may be derived from each? What should each child find opportunity to do in the public school? What defines the scope of the school?

3. Under what conditions does the child derive the greatest educative value from his school work? Explain the value of the aim and pivotal question. How should the materials of education be organized?

4. What is the teacher's duty with regard to the existing interests of children? Why should constructive and expressive work be fostered in the school?

5. What is the best discipline? How should selfishness and meanness be dealt with? Under what conditions can the school be what it ought to be?

